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DESCRIPTIVE CATALOGUE

OF THOSE

Maps, Charts and Surveys

RELATING TO AMERICA,

WHICH ARE MENTIONED IN

Vol. III. of Hakluyt's Great Work,

BY

J. G. KOHL.

WASHINGTON :
HENRY POLKINHORN, PRINTER.
1857.



233. c. 99.



INTRODUCTION.

The maps and charts which the discoverers of new regions used to construct form a class of the most interesting historical documents.

They not only *illustrate* in a most clear way the verbal reports and the geographical ideas of the explorers and *confirm* them, but they also contain sometimes *additional* matter not contained in the reports.

The greater number of authors on voyages and collectors of travelling reports, therefore, have accompanied their works by maps. We find such in Eden, in Ramusio, in Harris, in Prevost, in the *Lettres Édifiantes*, and in innumerable other works of this class.

Only our good old Hakluyt seems to be deficient in this. Besides a few maps, which he has published in his little volume, "*Divers Voyages*," and besides a general map of the world, edited in Paris 1587, and another one for the first edition of his great work of 1589, he has communicated to us no maps whatever, though he saw at his time still many interesting ancient draughts and sketches, which he by publishing could have preserved to us

as well as his valuable reports, journals, "traffiques, and navigations," and which are now lost to us.

It can perhaps not be said that Hakluyt was not aware of the value and import of an old map or chart as an historical monument. On the contrary, he seems to have been widely awake for the study of maps. He tells us himself that, when he was still a youth, the sight of a map decided the direction of his inclination and study. When he once visited a cousin of his, a gentleman in the Middle Temple—

"He found lying open upon his boord certaine books of cosmographie with an universalle mappe. The cousin explained to him all the parts of this mappe, showed him the division of the earth into three parts after the olde account, and then, according to the latter and better distribution, into more, pointed with his wand to all the known seas, gulfs, bayes, capes, rivers, and empires. And from the mappe he brought him to the Bible, and directed him to some verses of the 107 Psalme, where he read that they which go downe to the sea in ships and occupy by the great waters, see the works of the Lord and his woonders in the deep, &c. Which words of the prophet, together with his cousin's discourse, (about the map,) tooke in him so deepe an impression that he constantly resolved he would, by God's assistance, prosecute that knowledge and kind of literature the doors of which were so happily opened before him."*

Afterwards, it appears, Hakluyt was always and plentifully surrounded by maps:

"In my public lectures," he says, "I was the first that produced and showed both the olde imperfectly composed and the new lately-reformed mappes, globes, and spheares, to the generall contentment of my auditory."†

So he seems to have been the first man who introduced the study of maps into England.

* Hakluyt in the beginning of the dedication to the first edition of his great work.

† In the dedication to the first edition of his great work.

And still, after all, he thought so little of posterity that he made no attempt of delivering to us by print some of those treasures by which he was surrounded.

He does not give us the reason for this singular and much to be lamented omission. He only says that he has "*contented himself*" with inserting into his work "one generall mappe" of the world. The whole passage in which he tells us this (at the end of his preface to the first edition) deserves a place here. Perceiving that every one of his readers would regret and miss and *want maps* in his book, he says : "Nowe, because peradventure it would be expected as necessarie that the descriptions of so many parts of the world would farre more easily be conceived of the readers by adding geographicall and hydrographicall tables thereunto, *thou are by the way to be admonished that I have contented myselfe* with inserting into my worke one of the best generall mappes of the world only !"

O, good Hakluyt, how short, how unsatisfactory, how tyrannically spoken !

It is very probable, however, that Hakluyt was himself influenced in this proceeding by another great tyrant, namely, by the want of proper means. He alludes, in his prefaces and dedications, sometimes to "great charges and expenses" which he incurred for the benefit of the publication of his work ; and very probably he found that by the engraving of maps those expenses would have become too large for him. From the same cause also Purchas, as he openly avows, has in some instances omitted to reproduce for us most rare maps, which he had before his eyes, and which would be invaluable at present for our historians. It is, however, very possible that Hakluyt would not have found amongst his contemporaries men enough who would have sufficiently appreciated the value of maps as historical documents.

The more general interest for the study of the ancient maps, the antiquarian chartology, if I may use this expression, is something quite new. It has only commenced to flourish in our nineteenth century.

What Hakluyt omitted, either for want of means or because his time was not ripe for it, can, however, still, *at least in a certain degree*, be done to-day. We possess now a certain number of maps and charts which belong to the old navigations and travels preserved in Hakluyt, and which were made by the navigators and explorers themselves. We can and *we ought* to collect them from the different rare books and manuscript collections in which they are dispersed, and to put them at their right place near the reports and journals, to which they belong.

It is with this view, *with the plan of preparing a Hakluytian atlas*, that I present to the student of geography and history a little *preliminary* treatise or catalogue on the maps relating to America, which are *mentioned* in Hakluyt's "Third and Last Volume of the Voyages, Navigations, Trafiques, and Discoveries of the English Nation: imprinted at London. Anno Dom. 1600."*

In this treatise I will confine my researches to the American maps, because I have studied them a little better than those of the other parts of the world, and to the said "third volume," because in his other volumes and works Hakluyt has mentioned no American maps which are not at the same time mentioned in that.

I *exclude* likewise the other few maps relating to America, of which Hakluyt has published and giv-

* My quotations are, throughout the whole treatise, from this edition of 1600.

on us engraved copies ; as, for instance, the map of Thorne and that of Lok, in his "Divers Voyages," the map of the world, in his Latin translation of Peter Martin Angiera's work, Paris, 1587, and the other map of the world, (including America,) which he has published in the first edition of his great work of 1589, and likewise the excellent map of the world composed by M. Emmerie Mollineux, which was published partly on Hakluyt's admonition and probably with his assistance,* because all these maps are already better known. I will limit myself exclusively to notes and references on the maps which Hakluyt does *not* copy, and which he only *mentions*, because his allusions are very much scattered and have not been collected as yet, so far as my knowledge goes.

I must define here what I understand by the word "*mentioning*." Hakluyt has *mentioned* very numerous maps. He alludes often to the cartographical works of Ortelius, of Mercator, and of other geographers of his time. It evidently cannot be my intention to enter here into a disquisition on the works of such generally known men.

Hakluyt also occasionally alludes to some rarer map, which, however, is in no further connexion with his book, and to the illustration of which he adds no further remark. Such allusions may be commented upon in a note under the text of Hakluyt.

They can, however, be no object of my treatise, which shall only single out all those maps *on which Hakluyt gives particulars, the construction of which he describes or the existence of which he makes at least probable*, and which belong to his travelling reports.

* I have copies of all those maps, and have tried to analyze them in another work, in "a General Catalogue of all the Maps relating to America," of which this present treatise is a part.

Because Hakluyt has arranged his matter geographically, and because sometimes the same traveller—a Drake, a Gilbert, or Cabot—has explored different regions, therefore the reports of the same person on diverse parts of America are sometimes placed in very distant parts of the work. In the arrangement of my notes on the maps I have followed this plan of Hakluyt, and have given the maps in the same order in which he gives his reports. I admit that it would be in a certain manner convenient to have all the maps of the same person under one head, or to have them chronologically. But in a treatise like this, which is a kind of commentary, it is probably still more *proper* to adopt the order and plan of the work, which is to be illustrated.

I think that this my task is a new and not easy one, and I hope, therefore, that with respect to the imperfect execution I may claim some indulgence from a benevolent reader.

A Map of the World by Bartholomew Columbus, 1488.

Bartholomew Columbus was, like his brother, the celebrated Christopher Columbus, "a man of experience and skilful in sea-causes, and could very well make sea-cards and globes and other instruments belonging to that profession, as he was instructed by his brother."

Like his brother, he is said, under unfavorable circumstances, to have gained his livelihood by making and selling sea-charts.

It is therefore probable that he made *many* charts, of which none have come down to us. We have particular descriptions of four or five of them.* In

* I have collected all the scattered notices of Barth. Columbus's maps in my general catalogue of American maps.

our Hakluyt, however, only *one* is particularly mentioned in an extract which he gives of the Biography of Christopher Columbus, written by his son, Don Fernando Columbus.

Bartholomew Columbus was sent out to England by his brother to King Henry VII, to lay before him his scheme about a navigation to the west. After many difficulties he "at length began to deal with King Henry VII," and drew for him "a map of the world," which was presented to the King, to show to him which way and how the Columbus's intended to sail.

We have no special description of this map; it is, however, probable that it gave the configurations of the oceans, continents, and particularly of Eastern Asia and Western Europe and Africa, in a similar manner in which we see them depicted on the famous globe of Martin Behaim, in Nuremberg, of 1492.*

Fernando Columbus gives us nothing of the contents of the map of his uncle but a few Latin verses which were written upon it, and which are translated by Hakluyt in the following manner:

"Thou which desirest easily the coasts of lands to know,
This comely map, right learnedly, the same to thee will show:
Which Strabo, Plinie, Ptolemy, and Isodore maintaine; †
Yet, for all, they do not all in one accord remaine.
Here also is set down the late discovered burning zone
By Portingals, ‡ unto the world which whilem was unknown,

* I have given my reasons for this in my general catalogue of American maps.

† The Latin original has "Isidorus." Probably Isidoro of Sevilla, a famous and learned geographer of the 7th century, is meant.

‡ The Latin original has here the Spaniards, ("Hispan-

Whereof the knowledge now at length thorow all the world is blowen."

A little further under this verse was added the following :

"For the authour or the drawer."

He, whose deare native soile hight stately Genua,
Even he, whose name is Barthelomew Colon de Terra
Rubra,*

The yeare of grace a thousand and four hundred and
fourescore

And eight, and on the thirteenth day of February
more,

In London published this worke. To Christ all laud,
therefore."

From these verses we learn that B. Columbus made, or at least gave out, ("edidit,") this map in London on the 13th of February, 1488; and, further, that the map probably contained also the west coast of Africa as far south as the Cape of Good Hope, which cape was circumnavigated by Bartholomaeus Diaz in May, 1487. Diaz returned from there in the end of August, 1487, and consequently Bartholomew Columbus could be informed about his results already in February, 1488, and could call them *lately* made discoveries, ("zona nuper sulcata carinis,") whereof the knowledge *now* ("nunc") was blown all over the world. If it is true, what Las Casas asserts, that Bartholomew Ce-

is carinis.") Hakluyt corrected that to "Portingals," probably because he thought, like Humboldt, (*Kritische Untersuchungen*, Berlin 1852, vol. II., page, 274, note,) that the praise for the discovery of this part of Africa ought to be given to the Portuguese, and that the poet or author of the map alluded here in his verse to the Portuguese expedition of the years 1846-'87, under Bartholomaeus Diaz, at which expedition, as Las Lacasas asserts, Barth. Columbus himself was present.

* Terra Rubra or Terra Rossa is a little village east of Genoa, of which the Columbuses took sometimes their name. See about this Humboldt. l. c.

lumbus was not only *informed* about Diaz's expedition by report, but that he *assisted at it*, and was an eye-witness and actual surveyor of the west coast of Africa, then the greatest historical value of this his map existed probably in that part of it which depicted the African coast.

Sebast. Cabot's Charts.

Sebastian Cabot was one of the greatest discoverers of his time. He made himself different voyages; he planned and favored expeditions of others; he was for some time in Spain, as "*piloto mayor*," (chief pilot,) at the head of what might be called the Hydrographical Bureau of Spain. He kept also in England, in the latter part of his life, an influential position, connected with the progress of discovery, geography, and chartography.

From all this there can be no doubt that he executed during his long life *many* interesting chartographical works. Unfortunately not one of them has been preserved to us, and even the occasional accounts which we have of *some* of them are very scant. Hakluyt alludes to the following:

1. *A map of the East coast of North America, made by Seb. Cabot, and engraved by Clement Adams.* It appears* that the original of this engraving was made by Sebastian Cabot himself. He represented upon it the discoveries which he made on his first voyage, in the year 1497, as some believe in company, or as others suppose under the commandment, of his father, John Cabot. It is, therefore, probable that the greater part of the east coast of America, from Northern Labrador to Florida, was represented on it, so as Cabot thought to have recognised these coasts.

All that we know for certain about the contents

* From Hakluyt, l. c. p. 6.

of this map is contained in the inscription which was written upon it, and which Hakluyt has happily preserved to us. This inscription, *which indicates the very day and hour at which North America was discovered*, and which, therefore, is one of the most interesting documents for the history of North America which we have, says the following :

"In the yere of our Lord, 1497, John Cabot, a Venitian, and his sonne, Sebastian, (with an English fleet, set out from Bristol,) discovered that land, which no man before that time had attempted, *on the 24 of June, about 5 of the clocke early in the morning.* This land he called Prima Vista, that is to say, First Seene, because, as I suppose, it was that part whereof they had the first sight from sea."

"That island which lieth out before the land he called the Island of St. John, upon this occasion, as I thinke, because it was discovered upon the day of John de Baptist,"* &c.

From this we learn that the point on which Cabot first saw the coast, and which he called Prima Vista, was marked on this chart, and that, further, an island was represented on it "lying out before the land," which he called "the Island of St. John."

This map was "cut" by the engraver Clement Adams, a contemporary and probably a friend of Cabot† in the year 1549,‡ and copies of it seem to have been not rare in England at the time of Hakluyt. Hakluyt says§ in his work (printed 1600) that one of these copies "was to be seen

* I give the inscription only so far as it is interesting for us; that is to say, so far as it describes the lost map. The remainder of it has some notes about the beasts and inhabitants of the country, which has nothing to do with maps.

† See about this Tytler History of the Discovery of the Northern Coasts of America. New York, 1839, p. 17.

‡ Purchas, vol. III. p. 807.

§ Hakluyt, l. c. p. 6.

in her Majesty's privie gallerie at Westminster," and others "in many ancient merehant houses."

We know at present of no existing copy of this map. Humboldt believes that the copy of it which was hanging in the Royal gallery in Whitehall was lost or destroyed either at the occasion of the public sale after Charles I's death or at the great fire under William III.*

We observe that Hakluyt speaks here only of the map *engraved* by Adams after Cabot, and not of Cabot's *original manuscript charts*. Hakluyt, or rather Sir Humphrey Gilbert, quoted by Hakluyt,† speaks once more of Cabot's charts in the following manner: "Sebastian Cabota, by his personal experience and travels, hath set forth and described this passage (the northwest passage) in his charts, which are yet to be seen in the Queen's Majesty's privy gallery at Whitehall." Mr. Tytler‡ thinks it "evident" that in this place Hakluyt or Gilbert allude not to the *engraving*, but to the original manuscript charts of Cabot. The expression "charts" instead of *map* or *chart* seems to support this opinion, which, however, I believe might still be doubted.

It is more certain that Hakluyt has these original manuscript charts in view in another place and passage, namely, in his note on Sebastian Cabot, in his *Divers Voyages*,|| where he concludes this note with the following words:

* Humboldt's *Critical Researches on the Geography of the New World*, German edition; Berlin, 1852.

† See Hakluyt, l. c., p. 16.

‡ See his vindication of Hakluyt in his *Historical View of the Progress of Discovery of the more northern coasts of America*. New York, 1839; p. 344.

|| See edition printed for the Hakluyt Society, London, 1850, p. 26.

"This much concerning Seb. Gabotes discoverie may suffice for a present case; but shortly shall come out in print all his owne mappes and discourses, drawn and written by himselfe, which are in the custodie of the worshipful Master William Werthington, one of her Majestie's Pensioners, who, because so worthie monuments should not be buried in perpetual oblivion, is very willing to suffer them to be overseene and published in as good order as may bee to the encouragement and benefit of our countriemen."

Richward Willes, a "gentleman" who wrote a treatise about the northwest passage (contained in Hakluyt's Vol. 3, p. 24 sq.) mentions also (p. 25) a map of Cabot. He says that "*the Earl of Bedford had at Cheinies a table*" made by Seb. Cabot; and on page 26 he mentions again such "*a table of Seb. Cabot.*" We are unable to decide if these "*tables*" of Cabot, mentioned by Willes, were manuscript maps of Cabot, or copies of the map "cut by Adams," or quite another production of Cabot.

Ortelius speaks in his remarkable catalogue of maps and charts which he saw or used for his great "*Theatrum Orbis*," and which he enumerates in the beginning of this work, of an engraved *universal map of the world by Cabot*. He alludes to it in the following manner: "*Sebastianus Cabotus, Venetus. Universalis Tabula, quam impressam aeneis formis vidimus, sed sine nomine loci et impressoris.*" (Sebastian Cabot, from Venice. A universal map of the world, which I saw engraved on copper, but without the name of the place and printer.) The map which Hakluyt and his contemporaries saw appears to have contained only, or at least *principally*, the coasts discovered by Cabot; and it seems therefore that that work which Ortelius saw, and which he calls "*a universal map of the world*," was something different. We can, however, not say any thing more of it. Perhaps it was

the same map of which Ramusio speaks as being "*a large map of the world, with the navigations of the Portuguese and Spaniards minutely laid down on it,*" and of which he says that a map of this description was shown by Cabot himself to a certain gentleman, a friend of the celebrated Fracastoro.*

Charts and maps by Sebastian Cabot, which existed at first in manuscript, probably in *different* manuscript copies, and, since 1549, in *many printed copies*, were no doubt looked at and recopied by many persons; and we may therefore believe that on other maps of that time we have still some traces of the ideas and surveys of Cabot. The oldest sketch after Cabot is perhaps contained on the celebrated map of North America by Juan de la Cosa, (Anno 1500.) Cosa has delineated on this map a part of the east coast of North America, to which he writes "*Mar descubierta por Yngleses.*" (Sea discovered by the English.) Before 1500 we know of no other English expedition to these regions besides that of Cabot. Cosa could have received some account, or perhaps also a rough draught of Cabot's discoveries—perhaps by Cabot himself, perhaps by some of his sailors or pilots, who, after the expedition, may have come to some port of Spain. Cabot may have had among his crew even some Spaniards, who, after the expedition, returned to Spain and brought over the news and reports of his discovery.

Soon after 1500 the Portuguese as well as the French made maps of some parts of the coasts which Cabot discovered. The Cortereals (1499, 1501) brought maps of Labrador to Portugal. The earliest French map of Newfoundland and vicinity

* See about this Ramusio, first edition, tom. I. p. 413, 414.

is of the year 1506; but these maps became probably not at once known in England; and, besides this, they represented not so large a tract of coasts as the map of Cabot. It is therefore very probable that the maps of Cabot were for more than thirty years the only ones after which geographers and navigators, especially in England, shaped their ideas of those regions. The sailors who went to these parts had probably copies of Cabot's maps on board. Perhaps also the expeditions of the Spaniard Gomez and of the French Captain Verrazani were planned on Cabot's maps.*

A Chart of John Cabot.

John Cabot was by profession principally a merchant, but he acquired also some cosmographical knowledge, or made himself, as Hakluyt expresses it, "very expert and cunning in knowledge of the circuit of the world and islands." "He showed this," adds Hakluyt further, "by a sea card and other demonstrations." We know, however, no other particulars of this "sea card" which John Cabot appears to have made.†

Frobisher's Charts.—1576, 1578.

Master George Best, the well known journalist and reporter of Martin Frobisher's voyages, describes his general as a man who was "thoroughly furnished of the knowledge of the sphere and all other skills appertaining to the art of navigation."‡ Long before his voyages of discovery he occupied himself with cosmography, and made probably, like Columbus and other planners of discoveries, many *conjectural*

* The map of Cabot is mentioned again in Hakluyt, l. c., p. 28, with these words: "Sebastian Cabot, his table," without, however, any further addition.

† See about this Hakluyt, l. c., p. 9.

‡ Hakluyt, l. c., p. 57.

maps. Afterwards he made also *maps from actual survey* of those parts of America which he visited.

In Hakluyt are mentioned: 1. *A conjectural map of the world.*

Best in Hakluyt* says "that Frobisher laid before his friends "*a plaine plat*," to prove to them "that the voyage to the northwest was not only possible, but also easie to be performed." And again he informs us that Frobisher laid also such a conjectural map of his composition before the King. His words are the following: "He (Frobisher) repaired to the Court (from whence, as from the fountaine of our commonwealth, all good causes have their chief increase and maintenance) and there laid open to many great estates and learned men the *plot* and summe of his *device*."†

We have no further description of this "*plaine plat*" and "*plot*," but it was probably something very similar to the map of the world which Frobisher made *after* his discovery, and which is preserved to us. We will speak of it soon.

2. *A particuler chart of Frobisher's Strait and meta incognita.*

On his three voyages (1576, 1578) we see Martin Frobisher, though he was more busy with his pretended gold mines, sometimes occupied with *surveying the country*.

Best says, for instance, on one occasion,‡ "our Generall was coasting the country in *two little Pinnesses*, whereby at our return he might make the better relation thereof." Repeatedly it is mentioned in Best's reports that the "*height of the sunne*" and the "*latitude of a place*" were taken, though the figures and numbers for these latitudes are never

* Page 57.

† See Hakluyt, l. c., p. 58.

‡ See Hakluyt, l. c., p. 36.

given. In Best's report an empty space is left where these figures ought to be.* We are informed that Frobisher was very particular and mysterious about the true geographical position of his "meta incognita," and secreted it as much as possible even from his own people. Best was perhaps never duly informed about the latitudes of the places, or in omitting them he yielded to the secreting tendency of his general.

In the report of Frobisher's third expedition we are particularly informed of the surveying operations and qualities of one of the companions of Frobisher, a certain "James Beare, Master of the Anne Francis," one of the vessels of the expedition.

This Beare is said to have been "a sufficient and skilful mariner, and to have observed the year before (1577, on the second expedition) the whole place, and to have drawn out the cards of the coast."† And again, in another place of the report, we are informed of this same "Master of the Anne Francis;" that he "went up to the toppe of Hatton's headland, which is the highest land of all the streights, to the end to descry the situation of the country, and to take a true plot of the place."‡

It appears from this that this *James Beare was Frobisher's principal surveyor and mathematician*. It is very probable that he made a number of charts, maps, and plans. We do not know where they remained and where they may exist perhaps still at present. The only thing which we have still is a special chart or sketch of Meta incognita, Frobisher's Strait, and the Northern Atlantic, which is probably only an extract or a reduced copy of Beare's and Frobisher's charts.

* Hakluyt, l. c., p. 73, and on many other places of the report where latitudes are mentioned.

† Hakluyt, l. c., p. 80.

‡ Hakluyt, l. c., p. 89.

This engraved sketch is contained in the work, "A True Discourse of the late Voyages of Discoverie for the finding of a Passage to Cathaya by the North Weast, under the conduct of M. Frobisher Generall," (by Best,) London, 1578.

The chart is without an indication of latitudes and longitudes, which are left out for the same reasons from which they were omitted in the report itself. "With a particular card," says Best, on the title of his book, "so farre forth as the secretes of the voyage may permit." Though it is a very rough sketch, still it is highly interesting, because it is the only somewhat minute chartographical document delivered to us from that expedition.

Meta incognita is depicted on this map in the same manner as it is described in Best's report—"as broken lands and islands, being very many in number, which seem to make an Archipelagus, and which all differ in greatnesse, forme, and fashion from another."*

We see on this map Labrador, Hudson's Strait, Frobisher's Strait, and the broken lands on both sides of it so well depicted that there can be no mistake. In the interior of Labrador we find the following inscription: "Supposed firmeland of America." Hudson's Strait is called "the Mistaken Straights"—a name which was given to it on the third expedition of Frobisher, when he by chance entered it, and sailed a long way up in it towards the west, believing that it was the same strait which he had entered at the first and second expedition. In the western part of this "Mistaken Strait" (our Hudson's Strait) we find the words, "The way trendin to Cathaia." We are informed by Best that Frobisher himself believed that through

* See Hakluyt, l. c., p. 93.

this strait was really a passage to the west. The different islands, capes, and headlands have all on the map the names which are mentioned in Best's report as being imposed to them by Frobisher. It would, however, conduct us here too far if we would enter into the further particular history of those names.

3.—*A Map of the World, by Frobisher, after his Expeditions—1578.*

In the same already quoted work of Best, "*A True Discourse*," &c., is further contained a general map of the world, which either was made by Frobisher himself, or at least after his papers and ideas.

No. 1 may have been, as I have said already, such a plot like this; only that here now (in No. 3) a little picture of the Archipelago of *Meta incognita* is inserted from actual survey, and likewise a long broad strait, called "*Frobisher's Straights*," which runs from *Meta incognita* westwards, and at the western end of which we find "*Japan*" and "*Cathaia*," (China.)

I abstain here, however, from more particulars on this map, because it is not particularly mentioned in Hakluyt.

Charts of John Davis, 1585-1587.

The able navigator John Davis appears to have been very fond of "*plattling out the situation*" of the countries seen by him. We are informed that when he was at the outset of his first voyage, driven back by a storm, and constrained to stay for some time among the "*Silley islands*," he made at once the best use of his leisure time *by surveying these islands*. "He went about all those islands, and did plat out and describe the situation of all those islands, rocks, and harboroughs to the exact use of

navigation, with lines and scales thereunto convenient." If Davis was already so industrious in surveying on the coasts of England, how much more eager and active may he have been in the till then unknown regions which he discovered? It may be supposed that from every one of his three voyages of discovery he brought back a rich set of charts, plats, and maps.

In the reports on his voyages we find often mentioned not only the latitudes, but also, which is a rare thing at this time, "*the longitudes from the meridian of London*,"* as observed and determined by him. And he likewise marks, not seldom, "the variations of the compass."† Nay, in "the Traverse-book, made by John Davis in his third voyage, anno 1587," he gives us more than one hundred observations on the "altitude of the pole," with an accurate indication of the distances, of the direction of the wind for every day, and sometimes for 6-9 different hours of the day.

From this it is *nearly certain* that Davis brought already from his *first voyage* a new chart, made by him, though we are not informed about the existence of such a chart.

The chart which he brought from his *second voyage* (1586) is mentioned by himself in the short letter which he wrote to William Sanderson, a wealthy merchant of London, and the well-known and principal favorer of Davis's expeditions. He speaks in this letter of a "*card which he will bring to Sanderson*."‡ He does, however, give no further descriptions of the contents of this "card." For Davis says the following: "I hope I shall find favour with you to see *your card*. I pray God

* For instance, Hakluyt, l. c. p. 107.

† For instance, Hakluyt, l. c. p. 113.

‡ See Hakluyt, l. c. p. 108.

it be so true as the card shall be which I bring you." It seems evident from this that Sanderson and his associates had already a previous chart, on which something like Davis's Strait was depicted, and on which they planned their expeditions to that region. We know nothing about this *conjectural* chart. But it is very probable that upon it was something depicted like what we see on M. Lok's chart of North America, published by Hakluyt (1582) in his "Divers Voyages."

We see there upon the west side of Greenland a long broad channel running to the north exactly like Davis's Strait. Something similar is also found on many other maps previous to the expeditions of Davis. This appearance of Davis's Strait on the maps before Davis's actual discovery is somewhat similar to the appearance of Magellan's Strait on the maps before the time of Magellan's expedition. Perhaps it was a mere conjecture and chance, perhaps an old tradition, that Greenland was separated there from the rest of America. However, Davis himself appears not to have thought much of these old indications of his strait, for he says in his treatise, "The World's Hydrographical Description," that he "had no direction either by chart, globe, or other certain relation, in what altitude that passage was to be searched."*

In the report of *Davis's Third Voyage* again no charts are mentioned, but there is no doubt that he brought home also from this expedition special charts.

All his original charts have been lost to us. We have, however, a *very valuable compilation and reduction of them* on the famous globe of the world made in 1592, that is to say, a few years after Da-

* See Hakluyt, l. c. p. 119.

vis's return, by the well known geographer and friend of Hakluyt, Molineux, at the cost and expense of William Sanderson, which globe is still to-day preserved in the library of the Middle Temple in London.

Molineux was a most able geographer, who made beside this globe a plain map of the world, which is, I believe, the best and most conscientious plain globe of the time. We may, therefore, presume that he copied the charts of Davis very correctly, and laid them well down on his globe. That he gave the true experiences and ideas of Davis seems quite evident from a passage in Davis's Treatise, "The World's Hydrographical Description," where he says, "How far I proceeded, and in what form this (my) discovery lieth, doth appear upon the globe which Mr. Sanderson, to his very great charge, hath published, for the which he deservith great favor and commendationf."*. From this passage it appears that Davis himself *saw* the globe and *approved* of the manner in which his discoveries were laid down upon it.†

A Chart of the North Atlantic, by Antonio Zeno.

It is well known that the first report on the voyages and discoveries of the two Italians, Zeni, accompanied by a very curious chart of the Arctic countries and the North Atlantic ocean, is contained in the work :

"Relazione dello scoprimento dell isole Frislanda, Eslanda, Engroveland, Estotilanda, and Icaria, fatta da due fratelli, Zeni M. Nicolo il cavaliere e M. Antonio. Con un disegno particolare di tutte le dette parti di

* See Hakluyt, l. c. p. 120.

† When I was in London I had an opportunity of copying that part of the globe which relates to Davis's voyages.

tramentana de ler scoperte. In Venetia, per Francisco Marcolini, 1558."

[Relation of the discovery of the islands Frislanda, Eslanda, Engroveland, Estotiland, and Icaria, made by the two brothers Zeni, Master Nicolo, Knight, and Master Antonio, with a particular plot of all those northern parts discovered by them. Venice. By Francisco Marcolini. 1558.]

This work and the map contained in it excited so great an interest that the latter was already, in the year 1561, re-edited by Ruscelli in his Geography of Ptolemy, and a year later by Giuseppe Moletti, in his Geography of Ptolemy of 1562.

The map was no doubt known to Hakluyt and his contemporaries. In the collection of Hakluyt there are two allusions to it, once in the report on Frobisher's voyages,* where it is said that the Zenis were the first who discovered "West Frislande," (Greenland,) and "in their sea cards set out every part thereof;" and a second time in the extracts, which Hakluyt communicated out of the work of Francisco Marcolini,† where something similar is said.

Hakluyt himself gives no new dates for the history of this map upon which so much has been written, and in the examination of which we will not further enter here, because our author has also taken so little notice of it.

A Chart of the East Coast of North America by a Canon of St Paul. 1527.

Hakluyt says that Martine Frobisher and Richard Allen, a Knight of the Sepulchre, told him that a canon of Saint Paul in London, who was "a great mathematician, and a man indued with wealth," favored much the expedition of two

* Hakluyt, l. c., page 62.

† Hakluyt, l. c., page 127.

ships to North America, which set out in the year 1527, and which is usually called the voyage of the Dominus Vobiscum; and that this mathematician "went therein himself in person." He says further that one of the ships was cast away in the north parts of Newfoundland, but that the other sailed south to Cape Breton and along the coasts of Arambee, (New England,) and that, oftentimes putting their men on land to search the state of those unknown regions, they returned home about the beginning of October.*

If this be all true, if a distinguished mathematician was with the Dominus Vobiscum, if the people made so diligent research along the east coast of America, then they no doubt made also a map of that region. This map would be very interesting, if perhaps we could find it still in some hidden place in England.

Charts of Sir Humphrey Gilbert.

Sir Humphrey Gilbert was very much addicted to the study of geography, as he says himself in his short discourse on a "passage by the northwest to Cathaia," (China.) He "perused and diligently scanned the descriptions of Europe, Asia, and Africa, and conferred them with the mappes and globes, both antique and moderne."† He was by this study naturally lead to *construct maps for himself*.

We possess still one map of him, which is added to the work: "A discourse of a Discoverie to a new Passage to Cataia; written by Sir Humphrey Gilbert, knight;" with the motto, "Quid non!" "London, 1576."

This work is the "*large discourse*" which Sir

* See Hakluyt, l. c., p. 129.

† Hakluyt, l. c. p. 11.

Humphrey Gilbert, in Hakluyt,* is stated to have written on the subject of the Northwest passage.

The said map has the title : "A General Map, made for the particuler Declaration of this Discovery," (the Northwest passage.) On it America is represented as an island ; "as he, by all the descriptions, found it to be environed round about 'with sea, having on the south side of it the fretum 'or the straight of Magellan ; on the west side Mar 'del Sur, which sea runneth towards the north, separating it from the east parts of Asia, where the 'dominions of the Cathaians are ; on the east part 'the West ocean ; and on the north side the sea, 'that severeth it from Groneland, thorow which 'Northern sea the passage lyeth, which he took in 'hands to discover." On this map he cuts up Canada and Greenland into many large and small islands ; and, on the other hand, he makes Novaya Zemlya to be a large peninsula, running towards the Pole, and barricading a passage through the Northeast, to which latter passage Sir H. Gilbert was not favorably disposed.

I believe this is *the only map made by Gilbert which has come down to us*. He does not mention it in that *short discourse* which Hakluyt has embodied in his work.

Sir Humphrey Gilbert, from a student of geography, became himself a navigator and discoverer, and from a compiler of maps a surveyor. He made in the year 1583 a voyage, with the intention "to discover and to plant Christian habitants upon those large and ample countreys extended northward from the Cape of Florida."†

In the reports on this voyage we see him repeat-

* Hakluyt, l. c. p. 23.

† See Hakluyt, l. c. p. 143.

edly occupied with surveying the coasts of Newfoundland. He went out "in his frigate, the 'Squirrel'; the same frigate being most convenient 'to discover upon the coast, and to search into every 'harbour and creeke, which a great ship could not 'doe.'"* This little surveying vessel is mentioned at different occasions in the reports on his voyage.† The learned Hungarian, "Steven Parmenius, of Buda," who accompanied him in this expedition, assisted him probably in his surveying operations and astronomical observations; for, though we no where learn the speciality of this learned man, still it is from his connexion with Hakluyt, and from his desire to partake in an expedition of discovery *probable*, that his learnedness must have had something to do with cosmography and astronomy.

The charts and surveys which in this manner were produced *may* have been very valuable and interesting. We are told that they had upon them "the due graduation of the harbours, bayes, and capes." They, however, have not been preserved to us. *They perished† with the Admiral Gilbert, who disappeared in a storm one hundred and twenty-one leagues east of Cape Race.*||

Some rare Maps mentioned in the treatise about the Northwest Passage, by M. Richard Willes.

In the little essay on the Northwest passage by M. Richard Willes, which Hakluyt communicates,§

* See Hakluyt, l. c. p. 154.

† For instance, again Hakluyt, l. c. p. 166.

‡ Hakluyt l. c. p. 152, Edward Hales, the author of the report on Gilbert's Voyage, says: "The cardes and plats that were drawing with the due graduation of the harbours, bayes, and capes did perish with the Admiral."

|| Hakluyt, l. c. p. 155.

§ Hakluyt, l. c., p. 24, seq. Hakluyt does not say at what time this treatise was written. But from the cir-

are mentioned some maps of which it will perhaps be found useful to give some information.

Richard Willes, in writing this treatise, had evidently *many* maps before him. Some of them are still more or less commonly known; for instance, those of Ortelius, Mercator, and other celebrated cosmographers. I omit them here, and will only point out the less generally known.

1. Willes mentions *maps of an Italian, Joseph Moletius*; "halfe spheres of the whole world," as well as "a sea-carte," (p. 25;) and, again, "a universall table of the globe," (p. 29.)

Josephus Moletius (or Guiseppi Moletti) was an Italian geographer after the middle of the sixteenth century. Willes and Hakluyt and their contemporaries may have seen *more* maps of him than we know at present. We have still a work by him, with maps, entitled "*Geographia Ptolemaei*," (the Geography of Ptolemy.)

2. "*Mappes and globes of Gemma Frisius*" are repeatedly mentioned by Willes. Gemma Frisius, as a geographer, is sufficiently known. We have also a few maps by him. But Willes may have at his time known *more* numerous of his productions. I believe that we have not any "*globes*" of him.

3. A "table" of Sebastian Cabot, which, as Willes says, "the Earle of Bedford had at Cheynies." We have already mentioned this table among the general notes on the maps of Cabot.

4. A "*mappe cut out in form of a harte, made by certain French geographers*," on which, as Willes says, the West Indies (America) are represented

cumstance that Sir Humphrey Gilbert's discourse on the Northwest passage (which was published in 1576) is mentioned in it, it is evident that Willes must have written his pamphlet after 1576, and even after 1578, because Frobisher's expeditions are mentioned in it.

as a part of Asia. I have a copy of a map, made before 1576, which has all the qualities given to it by Willes, which was made in France, which is cut out in the form of a heart, and which shows America as a part of Asia. It is dated "Parisus, mense Julio, MDXXXI," (Paris, in the month of July, 1531;) made by a well known geographer, F. Delphinati, and added to the French edition of Grynaeus. It is therefore very probable to me that Willes alludes to this map.

5. On page 26 Willes mentions "*a table of New France, by Belognine Zalterius*," on which, as he says, the "Strait of Anian," between America and Asia, is put down and is made similar to the Strait of Magellan. "Belognine," or rather Belognini Zaltieri, engraved in Venice, in the year 1566, a map of North America, which has all the signs given by Willes to the map which he had before his eyes. It was published some years before Willes wrote his treatise. It has, though representing the whole of North America, the title Map of New France, ("*Disegno del discoperto della Nova Francia*;"') and it has the Strait of Anian exactly like Magellan's Strait, as Willes describes it. It is, therefore, no doubt the very map which Willes used for his discourse on the Northwest passage.

6. *A card for navigation, by Don Diego Hermano de Toledo*, on p. 26. With a map of this author I am not acquainted. The same man as a mapmaker is mentioned by Willes again on pages 28 and 29, under the appellation "Don Diego."

7. *A chart of North America and a Northwest Passage, by Andrew Urdaneta*. Willes mentions such a chart on page 26. Sir Humphrey Gilbert also mentions the same chart in his treatise on the Northwest passage.*

* Hakluyt, page 19.

Andrew Urdaneta is said by him to have been "a Friar of Mexico," who pretended to have circumnavigated the northern parts of North America, and to have come by way of a northwest passage from the Pacific to Germany.

He is further said to have made "a sea card by his own experience," (from actual survey,) "wherein was plainly set downe and described the northwest passage, agreeing in all points with Ortelius's mappe."

Urdaneta showed this chart to "one Salvatiera, a gentleman of Victoria, in Spain, who by chance came out of the West Indies into Ireland anno 1568, and spoke there of Urdaneta, of his voyage, and his chart, which he had seen eight years before, to Henry Sidney, the Deputy of Ireland, and Sir Humphrey Gilbert."*

There can be no doubt that the voyage and the discovery of a northwest passage by Urdaneta rests on false pretences. But it is very possible that a chart made by this same Urdaneta existed in the year 1560, and that it may have been an interesting one, showing the ideas current at that time amongst the Spaniards.

8. "*A map which Tramezine imprinted.*" A map of this description is unknown to me.

Charts of Jacques Cartier—1534, 1542.

Jacques Cartier, sent out to the northern parts of America by Francis I, and the Sieur de Meylleraie, vice-admiral of France, made three principal voyages to Newfoundland and the waters and regions to the west of it; the first during the summer of the year 1534; the second from May, 1535, to July, 1536; and the third from May, 1540, to the summer, (about July?) 1542.

* See Hakluyt, l. c., p. 19. The map of Urdaneta is again mentioned in Hakluyt, l. c., p. 26.

Cartier's voyages were official *royal expeditions*, made for the *express purpose of discovery*. Besides this, he is admitted by all authorities to have been a very able and active mariner. He was no doubt fitted out with such instruments and means for making observations and for surveying as his time and contemporaries could afford him, though we have in the reports on his voyages no particular list of such instruments and no specifying descriptions of his surveying activity.

It is therefore more than probable that he sent or brought home himself new charts from every one of his voyages of discovery, and presented them to the King and the Admiral of France. Such maps may also be hinted at in the passage which introduced the report on his third voyage, where it is said that "Francis I, having heard the report of Captain Cartier, his pilot general, in his two former voyages of discovery, *as well by writing as by word of mouth*, touching that which he had found and scene in the western parts of Canada and Hochelaga,"* etc. There can be no doubt that to those reports and *writings* were also added maps and charts.

1. *Cartier's charts from the first voyage*.—The charts of Cartier's first voyage could have comprised only the present great Gulf of St. Lawrence as far as the Bay of Chaleurs and Gaspé; for Cartier on this voyage did not yet enter the great river of Canada, and he not even recognised the island of Anticosti, at the mouth of this river.

J. Rotz, in his famous and splendid manuscript atlas, called "the Book of Hydrography," dedicated to Henry VIII, and dated from the year 1542,† *seems* to have drawn the coasts of Canada according

* See Hakluyt, l. c. p. 232.

† In the manuscript department of the British Museum, old royal library MS. 20, E. IX.

to the information and ideas which Cartier brought from his first voyage.

Rotz has the great Gulf of St. Lawrence complete. The bay of Chaleurs and the peninsula of Gaspé may be recognised. But there is on his map no island of Anticosti, no river St. Lawrence, of which latter only the mouth appears as an open bay or channel of undefined length. I conclude from this that Rotz used for the compilation of his map an old chart brought home from Cartier's first voyage, though he *might have had* in the year 1542 the charts of the second voyage.

2. *Charts of Cartier's Second Voyage, 1535-36.* Cartier made his principal discoveries on his second expedition. He discovered and surveyed on it the Island of Anticosti, the two channels to the south and north of it, and the whole course of the great river of Canada as far as Hochelaga, (Montreal,) and the sauts or rapids above this place.

In the report on this voyage no maps are mentioned. But we are very rich in splendidly-executed manuscript maps, which were made in the middle of the 16th century, which all represent the river of Canada as high up as Hochelaga and to the first sauts. We find marked on them many of the names which are mentioned in the second report of Cartier. But as all these maps, with the only exception of that of Rotz, were made after 1544, after the return of Roberval and his men, they therefore contain likewise the discoveries and names of Roberval, and can be called copies from Cartier's *second* set of charts only in so far as those charts lay at the bottom of all these later productions.

3. *Charts of Cartier's Third Voyage, 1540-42.* The original report on Cartier's third voyage, of which Hakluyt gives us a translation, seems to

have been accompanied and illustrated by charts and plans.

At least once, on page 235, Hakluyt interrupts his report, leaves a blank space, and puts into this space, with great letters, the remark: "*Hereafter followeth the figure of the three Sauts.*" He does not, however, give us this "figure." He may have omitted more such "figures," and *perhaps* also charts which accompanied the original, which he had before his eyes.

4. *Maps and Charts of Canada, made by Cartier after his three Expeditions.*—Where the original charts and plans of Cartier finally remained we cannot tell. There seems to have been an uncertainty about their fate even in the year 1587. From some very interesting letters which Hakluyt has preserved us* we may gather the following:

A certain Master John Growte, "a student in Paris," who was fond of geographical and historical researches, appears† to have made inquiries in St. Malo, the birthplace of Cartier, after the charts and writings of this mariner, and to have addressed himself to a certain Jaques Noël,‡ a relation of Cartier's, who lived in St. Malo; for this Noël promises to his friend Growte, amongst other things, "that he will not fail to informe himself if there

* See Hakluyt, l. c., p. 236.

† This seems, amongst others, to be evident from the circumstance that he presented a newly published map of the West Indies to his brother-in-law, Giles Walter.

‡ This Jaques Noël is once called a "nephew," and at another time a "grand nephew" of Jaques Cartier. I think he was his nephew—1st, because he himself calls Cartier "his uncle;" 2d, because he asserts that he had been with his uncle in Canada, who was then not so old that he was likely to have had already *grand* nephews. In the report on Cartier's third voyage also a nephew of the family, name of Noël, is mentioned; but he is called *Steven* Noël. In Hakluyt, l. c., p. 234.

' be any meane to find out those *descriptions* which
' Captain Cartier made after his two *last* voyages
' into Canada."

The letter in which Noel promises this is dated
"from St. Malo, the 19th day of June, 1587."

In a following letter, which is without date,
the same Jaques Noel writes to the same John
Growte that he could not recover any thing of the
writings of Captain Jaques Cartier, his uncle, de-
ceased, although he had made search in all places
that he possibly could in the town of St. Malo,
saving of a *certaine booke, made in manner of a*
sea chart. This book, Noel goes on to say, "is in
' the possession of Master Cremeur. It is passing
' well marked and drawne for all the river of Can-
' ada, whereof I am well assured, because I myself
' have knowledge thereof as farre as to the Sauts,
' where I have bene; the heights of which Sauts
' is in 44 degrees. I found in the sayd chart, be-
' yond the place where the river is divided in twaine,
' in the midst of both the branches of the said river,
' somewhat nearest that arme which runneth to-
' ward the northwest, the words following, written
' in the hand of Jaques Cartier: 'By the people
' of Canada and Hochelaga it was said that there is
' the land of Saguenay, which is rich and wealthy in
' precious stones.'"

"And about an hundred leagues under the same
' I found written these two lines following in the
' said carde, inclining towards the southwest: 'Here
' in this country are cinamon and cloves, which they
' call in their language 'canodeta.'"

Besides this chart of Cartier, "in the possession
of Mr. Cremeur," there existed *still another chart*
of Cartier in St. Malo, which his nephew Jaques
Noel owned himself. He speaks twice of it: at
first in his first letter, where he speaks of "my

booke, which is agreeable to the booke by Jaques Cartier," (of Mr. Cremeur?*) and then again in his second letter† where he writes the following: "Touching the effect of *my* booke, whereof I spoke unto you, it is made after the manner of a sea chart, which I have delivered to my two sonnes, Michael and John, which at this present are in Canada." From this we may with probability conclude that this *Noel's book or chart* was a copy of *Cremeur's book*, though it appears not to have had so evident signs and proofs of its having been a work of Cartier; for instance, no inscriptions written "*in the hand of the uncle.*"

From this all we learn for certain that there existed in St. Malo in the year 1587 charts of Cartier. We cannot from our scanty information exactly say what they were. But from the phrase in the postscriptum to the first letter, "descriptions which Capt. Cartier made after his two *last* voyages into Canada," it seems probable that they were a *compilation* which Cartier made himself *after* his voyages, when he lived quietly in St. Malo, and not his old original sea charts, which he made *during* the voyages, and which were probably delivered to the Government.

Charts of Roberval—1542-'44.

John Francis de la Roche, Lord of Roberval, was, in the year 1540, appointed by Francis I. as his Lieutenant-General in the countries of Canada, Saguenay, and Hochelaga, and sailed from France in the month of April, 1542, to take possession of his Government, and to found there colonies. Cartier, who was to prepare him the way, had already preceded him in the year 1540, and when Roberval

* See Hakluyt, l. c., p. 236.

† See Hakluyt, l. c., p. 237.

arrived in Newfoundland he (Cartier) returned to France, having already accomplished his third voyage and taking little notice of Roberval, who was appointed to be his chief.

Both voyages, the *third of Cartier* and the *first of Roberval*, may therefore be considered as quite separate expeditions; and they resulted probably also in separate and different charts.

Roberval had no doubt copies of Cartier's charts on board, which, however, on his expedition probably were revised, corrected, and augmented.

Roberval himself was more of an enterprising grand seigneur or a chevalier than a mariner, astronomer, or mathematician. We hear of him that he used very good justice, and punished every man according to his offence. "Michael Gaillon was hanged for his theft; John of Nantes was laid in irons for his offence; and divers were whipped, as well men as women, by which means they lived in quiet." But we never see him "*going out in a small pinasse*," like Sir Humphrey Gilbert, Davis, and others. However, the Grand Seigneur Roberval was accompanied by an "excellent mariner," John Alfonse of Xanctoigne, who was appointed to be his chief pilot. That this *Xanctoigne was occupied on the voyage with surveying and astronomical observations* we see from his little nautical essay which Hakluyt communicates under the title: "The course from Belle Isle, Carpont, and the Grand Bay in Newfoundland, up the river, of Canada, for the space of two hundred and thirty leagues, observed by John Alphonse of Xanctoigne, chiefe pilote to Monsieur Roberval, 1542."* We might call this essay a geographical chart, written and expressed in words. It contains a complete de-

* Hakluyt, l. c., p. 237.

scription of the countries, islands, banks, and river of New France, with the indication of distances, latitude, and trending of the coasts. Though we are not expressly *informed* that he laid this all down in lines and figures on a chart, still there can be scarcely any doubt *that he did so*.* We have more than one old manuscript map of Canada and vicinity which were made soon after the year 1544, (the year in which Roberval returned† to France,) and which bear witness that they have been copied principally from the charts made on his expedition, probably by Xanctoine or under his direction. These charts are, however, not *exclusively* taken from Roberval and Xanctoine. They have embodied also the matter and discoveries of Cartier, and they must therefore be considered as copies or *compilations from both sources*, whilst their original, the true sea-charts of the three named discoverers which they laid out on their voyages themselves, have been lost to us.

I will give here a list of the principal, oldest, and most interesting charts relating to the voyages of Cartier and Roberval, which I have seen, and of which I possess fac-similes. They are—

1. *That chart of Canada, Labrador, and the whole east coast of America in the Atlas of Rotz*, of which I have spoken already.

To this map we can with certainty give the eldest date of the class. It was made in 1542; that is to say, before the return of Cartier from his third and

* I am nearly certain that I have seen maps "made by Xanctoine," though at this moment I cannot say where.

† Roberval made still another voyage to Canada after 1548, but the reports of it are very uncertain. It seems, however, certain that he did not return to Europe from this voyage; and probably, therefore, no maps or charts of it came to Europe.

of Roberval from his first voyage. I have said already that it seems probable that this map was compiled after the charts and discoveries made on Cartier's first voyage, (1534.)

2. *A chart of Canada, Labrador, and the whole east coast of North America, as far south as Florida*, contained in a brilliant manuscript atlas, in the library of Sir Thomas Phillips, at Middlehill, in Worcestershire, England.* It is a most interesting document, of which we know also the date with certainty; it was made in the year 1547, by a certain Nicolaus Vallard, of Dieppe. From the circumstance that the principal settlement which Roberval made on the river of Canada, and which he called "France Roi," does not appear on the map, we might be induced to the belief that Vallard used for the compilation of his work only Cartier's maps. But another fact makes this again doubtful. Among the groupes of Frenchmen depicted on the map may be also observed the portraits of different French women or ladies. We are not aware that such were brought over by Cartier, who came only with the intention of discovery; whilst we know for certain that Roberval, who had a plan for settling and colonization, brought also ladies and women.†

3. *A Sketch of Canada, Newfoundland, and the river St. Lawrence*, on a manuscript map of the world, in the possession of the excellent Mr. Jomard, in Paris. Date and author of the map are uncertain. It is, however, evident from the work itself that it was made after 1544, (the year of Ro-

* This gentleman, with the most generous kindness, allowed me, when I was in England, not only to visit and use for my purposes his most valuable collection of books and manuscripts, but also to copy different rare maps contained in it.

† See Hakluyt, l. c. p. 240.

berval's return,) and with the assistance of Roberval's reports and charts; for, at first, Roberval's fort, "France Roi," is indicated on it; and, secondly, a troop of French soldiers, with an officer or plumed knight at their head, are depicted on it, and under the figure of the officer is written, "Monsieur de Roberval." The unknown author of this map appears, however, to have used Cartier's map; for we find likewise "Ste. Croix," the settlement or principal station of Cartier's vessels on his second voyage, indicated on it.

4. *A picture of Canada and vicinity*, on a large French map of the world, preserved in the British Museum. (Harl. Add. No. 5413.) The exact date and the author of this interesting work are not given. The fort of Roberval, "France Roi," is not upon it, but the principal ship-station of Cartier, "Ste. Croix," and Cartier's non plus ultra, "St. Malo," (named after his birth-place,) are indicated. From this we might conclude that the unknown author of the work used principally Cartier's map, if it was not for the portrait of a grand seigneur, in a red velvet cloak and yellow silken stockings, who is also depicted on it, and who seems to be more like Roberval than Cartier.

Every one of these maps, though in the general features they are all alike, has its particularities. We cannot, however, here enter into a more minute history and criticism of them, because they are not alluded to at all in Hakluyt. It suffices here to have indicated them in a general way.*

The picture of Canada, Newfoundland, and the river St. Lawrence, given in these works, which were all derived from Cartier's, Roberval's, and Xanetoigne's surveys, was throughout the whole

* I dwell more on them in my General Catalogue of American Maps and Charts.

sixteenth century copied by many geographers and map-makers of Europe, and the geography and maps of those regions were essentially changed only after the discoveries and travels of DeMons, Champlain, etc. ; that is to say, after 1600.

A Map of America, printed and published in Paris in about 1587.

In the letters of Jaques Noel to John Growte, of which we spoke just now in alluding to Cartier's maps, a "mappe" is mentioned and described in the following manner : " A Mappe printed at Paris, ' dedicated to one Mr. Hakluyt, an English gentleman, wherein all the West Indies, the Kingdom ' of New Mexico, and the countreys of Canada, ' Hochelaga, and Saguenay are contained.' "*.

Noel thinks that " the river of Canada is not marked on this map, as it ought to be," and as it was laid down in his " Booke of Jaques Cartier." His criticism is, however, not very important.

This map is one which Hakluyt published himself in Paris in 1587, and we have already stated in our introduction why we will not enter into a further criticism on it.

We will only add here this remark, that the English gentleman " Hakluyt," to whom the map was dedicated, is not our Richard Hakluyt, but probably that learned cousin of Hakluyt who is mentioned in Hakluyt's preface to his great work, and whose christian name was also Richard.†

Maps of the first English navigators to " Virginia," (North Carolina,) and particularly of John White.

The well-known expeditions to " Virginia," (our present North Carolina,) made at the charge and

* Hakluyt, l. c., p. 236.

† I give more upon this map in my General Catalogue of American Maps and Charts.

under the direction of Sir Walter Raleigh, commenced in the year 1584 with the first voyage to those parts under Captains Amadas and Barlowe. This expedition was followed during the years 1584–1590 by a series of others under the command of Raleigh's captains—Greenville, Hariot, White, and others. With the expedition of John White (1590) ended the series of the first *principal* voyages of discovery to "Virginia."

It is very probable that on all those expeditions sketches and draughts were made of the new discovered country, the interior of which was *for the first time* entered at this occasion, though we have only (with one exception) verbal reports of them.

By Amadas, Barlowe, Greenville, Hariot, the whole configuration of the east coast of North America between Cape Look-out and Chesapeake Bay was repeatedly surveyed. They entered our present Albermarle and Pamlico Sounds, circumnavigated the islands lying in them, and marked the mouths of the rivers Neuse, Roanoke, Chowan, &c. emptying into them.*

From an occasional observation which Captain Hariot makes in his report we learn that these captains of Sir Walter Raleigh were, according to the time being, *not badly furnished with the means and instruments for making observations and maps*. Capt. Hariot enumerates among the things which they had with them, and which astonished the Indians, and which were strange to them also, "magnetical instruments, sea compasses, a perspective glasse, writing and reading and spring clocks." We ourselves may find it strange that we must gather our information about the scientific outfit of the expeditions at *such an occasion*, and that these captains never give about so important a point due

* See the reports in Hakluyt, l. c., pp. 246–295.

information in the *introduction* to their reports. They seldom forget to tell us how well they were furnished with "ammunition, victuals, cannon-shot, powder, and armory;" but of the astronomical and nautical instruments no particulars are given of what description they were, by whom made, &c. These latter are always comprised under the "other *sundry* things necessary to navigation." They enumerate also their soldiers, their sailors and gunners, and sometimes even the "trumpeters." But the astronomers and some other somewhat scientific men, and the qualifications they had, are rarely or never alluded to.

The most effectual exploring and surveying excursions appear to have been made at the time of the first Virginian colony on Roanoke island, (from the 17th of August, 1585, until the 18th of June, 1586,) under the conduct of Mr. Ralph Lane, the governor of that colony.

Ralph Lane extended the discovery and exploration of the country from "Roanoke into the south, into the north, into the northwest, and into the west." Northward his furthest discovery was Chesapeake Bay,* and westward into the interior of the country he went on the river Moratuk (our present Roanoke river) as far up as he could go by four days' rowing in boats.†

From this it is very possible that *Ralph Lane made the principal map of those regions*, or at least collected the principal materials for such a map. He mentions in his report also his maps, but only to tell us that they were unhappily lost and destroyed in the water.

He says that when Sir Francis Drake sent his pinnaces unto the island of Roanoke to fetch away

* See Hakluyt, l. c. p. 255.

† See Hakluyt, l. c. p. 259.

a few men that were still left there with the baggage, "the weather was so boisterous, and the pinaces so often on ground, that the most of all we had, with all our *cards, books, and writings, were by the sailors cast overboard.*"*

It is, however, very possible that Ralph Lane, in the same manner in which he afterwards put down a report *without his "books and writings,"* so also laid out again a draught or sketch of the country *without his "cards."*

Also, during the time of the so-called second colony of Virginia under the charge of John White, some explorations were made. John White sailed from England on the 26th of April, 1587, and returned to England in November, 1587, leaving his "second colony" in the country, with the intention to bring them supplies.

John White made afterwards another voyage to Virginia, to look after his forsaken and unhappy colonists which he left there in 1587 without being able to return so soon. He set out for this voyage from England on the 20th of March, and returned to England on the 24th of October, 1590. On this voyage he made no new explorations at all, and it is therefore very probable that the map of Virginia which is ascribed to him, and of which we have still a copy, was prepared on the voyage of 1587.

Where the original draughts of this map of White remained we cannot tell. But the first printed copy of it has been given to the world by Theodore de Bry, in the work, "*Admiranda Narratio, fide tamen digna de commodis et incolarum ritibus Virginis etc., Francoforti ad Mœnum. Anno MDXC.*"—(Wonderful relation, nevertheless very true, of the commodities and of the customs of the inhabitants

* Hakluyt, l. c. p. 264.

of Virginia.—Frankfort-on-the-Main, in the year 1590.)

The well-known map in this book has the title: "*Americæ pars nunc Virginis dicta, primum ab Anglis inventa sumtibus Dni Walteri Raleigh, Anno Dni. MDLXXXV,*" etc.—(A part of America now called Virginia, for the first time found by the English, on the expenses of Sir Walter Raleigh, in the year of our Lord 1585.)

This map of the country which we now call North Carolina is by De Bry put at the head of a collection of images, pictures, and sketches, on which he makes the following remark: "*Omnia diligenter observata, et ad vivum expressa a Joanne With ejus gratia in illam provinciam annis 1585 et 1588 misso. Deinde in æs incisa et primum in lucem evulgata à Theodoro de Bry.*" (All this is accurately observed and after nature expressed by John With, who for the purpose was sent to that province in the years 1585 and 1588. Afterwards it was engraved, and for the first time published by Theodore de Bry.)

On the map itself we find again the inscription: "*Auctore Joanne With. Sculptore Joanne de Bry.*" (The author of this map was John With; the engraver John De Bry.)

De Bry gives us no further information about the history and the author of the map, except that he procured [bought?] it in England.* The question is, who this "John Whit" was who is named as the author of this interesting document—the

* De Bry says at another place, where he speaks of the manner in which he procured his map of Florida, that he had formerly spoken somewhat at large about the manner in which he procured the map of Virginia; but I was not able to discover any where in his works such an explanation.

oldest map of Carolina? I think he cannot be any other man but the Capt. John White. Camus* thinks that he was "*a painter*" sent over to Virginia with one of the captains, and says that he is called somewhere "*pictor*." He does not, however, give his authority for this. In De Bry there is nothing about it. That De Bry makes him to be as well the author of the Indian portraits and views is no proof of his being a painter. Those fanciful portraits and views were probably all invented by De Bry himself, and were never made after nature, neither by a *painter* nor by a *Captain* John White or Whit.

To make our pretensions more plausible we must at first state that there is some confusion in De Bry as well in writing the name of his map-maker as in the dates of his voyage.

He writes the name of the map-maker once "Whit," and once "With." Capt. John White writes his name always "White." When De Bry was, as it is shown, *uncertain* about the spelling of this name, then we may assume that none of his two spellings was right, and that the name ought to be "White."

His dates are also partly wrong. He says that "John With" was sent out to Virginia in 1585 and 1588. In the expedition of 1585, under Sir Richard Greenville, no "painter John With" is mentioned; but our Captain "John White"† is mentioned. That in the year 1588 a "painter John With" should go out to Virginia is very improbable, because we do not know of any Virginian expedition of that year in which the poor and suffering "second colony" was left quite alone there. De Bry thought probably of "Capt. John White's" expedition of the year 1587. We find also on the

* In his well known researches on De Bry's work.

† Hakluyt l. c. p. 258.

list of the settlers in the second colony* no "John With" mentioned, only "*John White,*" the *Captain and Governor of the colony.*

From all this I conclude that "John With," which De Bry puts down as the author of the map, is nobody else than the often-mentioned Captain and Governor John White. If he really *made and drew* the map may be doubted. De Bry *procured* probably the map from White, and *made* him to be the author. But it is possible that Captain John White compiled the map, or directed it to be compiled, as well from his own observations as also from the notes, reports, and draughts of his predecessors—principally of Ralph Lane, who, as I said, after the loss of his cards, may have made another sketch.

The picture which we find on the map resembles very much the description which Ralph Lane gave of his discoveries.† We find on it Chesapeake Bay, ("Chesepiooc Sinus,") and also the river "Moratuc," (our Roanoke river.) John White, who never was in this bay and river, could only lay them down on his map *after Lane.*

Because in Hakluyt this map is not mentioned at all we must abstain from a further criticism of it, and may only add the observation, that this map remained for a long time a model and type for all geographers who made maps of this part of America, (North Carolina,) because it lasted more than sixty years after the unsuccessful colonization of Roanoke, until the exploration and settlement of those regions commenced anew. We therefore see this picture of John White *reproduced many times* in the atlases of Mercator and Hondius, and in the works of Laët. Nay, even still the first

* See Hakluyt l. c. p. 287.

† See our notes above.

chartographers of the province of Carolina seem to have used this picture of "Ould Virginia."

A Chart of the East Coast of America, by John de Verrazano. 1524.

- * We see from the short report of Verrazano in his voyage of discovery in the year 1524, contained in Hakluyt,* that he *was constantly occupied with surveying and accurately describing the new coasts* along which he sailed. He indicates repeatedly the aspect and trending of the coasts, the rhumbs, the distances from one place to the other, and sometimes he also gives us the latitudes observed by him.† We are not in this report explicitly informed by Verrazano himself that he laid also all these observations down on a chart. But at first it would have been astonishing if a well instructed Italian navigator of that time had not drawn a chart on such an occasion. And then Hakluyt informs us in his divers voyages of the existence of a map of the east coast of North America, presented by Verrazano to King Henry VIII, and probably also made by him.‡

It appears that Verrazano's charts are lost to us. But no doubt other map compilers of the sixteenth century knew and saw them, copied them, and drew after them the coasts of North America. So, for instance, perhaps Ortelius, (1570.) It is true he does not mention the charts of Verrazano in his remarkable catalogue of such maps, which he possessed or saw. But he puts down Verrazano's "Isle of Claudia"|| on his general map of America.

* Hakluyt, l. c., from page 295, 300.

† For instance, page 300.

‡ See Hakluyt's *Divers Voyages*. Edit. 1850, p. 11.

|| I have this name here unchanged, though I believe and will prove elsewhere that the island ought to be called by another name.

It is possible, however, that he took this island only from the *report* in Ramusio about Verrazano and not from a *chart*.

It is more certain that *M. Lok had the charts, or at least some charts of Verrazano before him* when he drew his map of North America, which Hakluyt has inserted in his "*Divers Voyages Touching the Discoveries of America*. London, 1582." We see on this map not only Verrazano's Island of "Claudia," but also the great harbor or gulf near it, (our Narragansett Bay.) Likewise the River Hudson, discovered by Verrazano, is plainly indicated on that map as a long channel; and besides this a "*Mare de Verrazano*." Lok reduced all these parts of his map from a larger map of Verrazano, which he had before his eyes.

A Map of Florida by James le Moyne—1568.

On the celebrated expeditions of the Frenchmen to what was then called the Eastern Coast of Florida we have in Hakluyt the following reports:

1. The first voyage of Captain John Ribault to Florida in 1562.*
2. The voyage of Captain René Laudonniere to Florida, 1564.†
3. A second voyage of Captain John Ribault to Florida, 1565.‡
4. The voyage of Captain Dominique Gourgues to Florida, 1567.||

We will not give here the literary and bibliographical history of these reports. We consider them exclusively with respect to what they contain about our subject—about the composition of maps.

* Hakluyt, l. c., p. 308.

† Hakluyt, l. c., p. 319.

‡ Hakluyt, l. c., p. 349.

|| Hakluyt, l. c., p. 356.

All these expeditions had a different character and tendency, and they conducted to different results.

The first, 1562, had the character of a preliminary *exploring expedition*. Ribault sailed from France in February, 1562, and returned there in July, 1562.

The expedition was fitted out with royal consent by the Lord Admiral of France, the celebrated de Chastillon. It was *explicitly destined for discovery* and settlement*, and accordingly fitted out for that purpose. It is therefore more than probable *that also a chart of the Coast of Florida was composed on this expedition*, though the report does not speak about it at all.

Ribault sailed along the whole east coast of the peninsula of Florida and of our present Georgia and South Carolina. He discovered there many capes, islands, and rivers which were new to him, and to which he gave names. He entered and surveyed different ports, and at last settled a little colony and fort called "*Charlesfort*," at the wide mouth of an inlet or river, which he named "*Port Royal*," and then sailed home to bring to the Admiral and King his report, (and his maps?) and to abide their decision what should be done further.

The men which Ribault left in Florida made different excursions into the interior, and prosecuted the discovery of the country, but, being left without succor, they got in trouble and want, and were at last rescued by an English ship.

The civil wars broken out in France and other unfavorable circumstances were for some time in the way of a second outfit, of a relief expedition. At last, in April, 1564, this expedition sailed from France under the command of Capt. René Laudon-

* Hakluyt, l. c., p. 308.

nière. *He had probably a chart of the country by Ribault with him.* He made about the same voyage and followed the same route as Ribault; but he changed the place of settlement from Port Royal to the mouth of what he named the "River May," (our present St. John's river.) He founded there a fort called "*Fort Caroline*," and stayed in the country two summers and one winter. He had with him different able officers and a "*painter*," (map-maker?) and no doubt corrected the preliminary map of Ribault in many respects.

During his stay *the principal discoveries into the interior of the country were made*, and particularly the whole river St. John was surveyed on repeated expeditions and boat voyages.

Of all the four expeditions this second is therefore in point of geography the most important one.

The third expedition under Ribault, 1565, was only made for the purpose of bringing over a new commander of the colony, fresh soldiers, ammunitions, and succor. No new discoveries (and probably also no maps) were made on it. Ribault sailed directly to the river May, to Fort Caroline, where soon after his arrival the Spaniards, under the Gen. Don Pedro Menendez, in a most cruel manner made an end of him and of the whole French colony.

The last expedition under Gourgues, 1567, had no scientific or exploring tendency at all. It was a mere private undertaking, made for the sole purpose of hitting a blow on the Spaniards and of taking revenge on them for their murderous destruction of the French colony. It was executed very quickly.

The only map or chart which has come down to us from all these French expeditions is that which De Bry has preserved for us, and which he engraved, printed, and published in his work:

“Brevis Narratio eorum quae in Florida, Americae provincia Gallis acciderunt, secunda in illa navigatione Duce Renato de Laudoniere, classis prefecto. Anno MDLXIII.* Auctore Jacobo le Moyne, etc., Francofurti ed Moenum. Sumptibus Theodori de Bry. Anno MDXCI.”

(A short narration of the events in Florida, a province of America, at the second expedition to it, under the command of the Admiral René de Laudonniere. In the year 1563* by James Le Moyne. Frankfort on the Maine. At the expenses of Theodore de Bry, in the year 1591.)

The map itself has the title:

“Floridae, Americae provinciae recens et exactissima descriptio. Auctore Jacobo le Moyne, cui cognomen de Morgues, qui Laudonierum altera navigatione comitatus est, atque, adhibitis aliquot militibus ob pericula regionis illius, interiora et maritima diligenter lustravit, et exactissime dimensus est, observata etiam singulorum fluminum inter se distantia, ut ipsemet redux, Carolo IX, Galliarum Regi demonstravit.”

(A new and exact description (map) of Florida, a province of America, by James Le Moyne, called de Morgues, who accompanied Laudonniere in the second French expedition to that province, and who, with the aid of some soldiers to protect him against dangers, explored the interior as well as the maritime parts of that region most industriously, and measured it very exactly, observing also the distances of the single rivers from each other, as he showed it himself after his return to Charles IX, King of France.)

Hakluyt does not *describe* this map, but he appears to *allude* to it, and at all events mentions the name and the work of the Frenchman, Le Moyne, whom he calls by his surname, De Morgues, in the following passage, which occurs in a letter written

* The year 1563 must be a mistake by De Bry, for we do not know of any French expedition to Florida in 1563, and Laudonniere, with his map-maker, Le Moyne, set out from France in April, 1564.

by Hakluyt, addressed by him to Sir Walter Raleigh, and dated "London, 1st of May, 1587:"*

"Many special poynts, concerning the commodities of those parts with divers other things, are lively drawn, in colours at your no small charges by the skilful painter, James Morgaes, sometime living in the Black-fryers, in London, (whom Monsieur Chastillon, then Admirall of France, sent thither with Laudonniere for the purpose,) which was an eye-witness of the goodness and fertility of those regions, and has put down in writing many singularities which are not mentioned in this treatise, [videlicet, which Hakluyt embodied in his work,] which since he has published, together with the portraitures."

This is all that Hakluyt has about the activity and productions of our map-maker, Le Moyne. Hakluyt, in the year 1587, when he wrote that letter, could not know the Latin and illustrated edition of Le Moyne's work made by De Bry in the year 1591. When he therefore speaks of a publication of Le Moyne's work, pictures, views, and maps, it seems that he must allude to another publication, which he moreover says was made by Le Moyne himself, and as it appears in England. The whole (manuscript, or also print?) was executed "at the not small charge" of Sir Walter Raleigh. I do not know of any such English publication previous to De Bry's edition, (1591,) and I am perfectly at a loss to tell what Hakluyt means here.

From De Bry we can gather still the following about the history of our map-maker and his work. He tells us in his "Ad Lectorem Præfatio," (Preface to the Reader,) on the second page, that he procured this report and the pictures, ("icones,") under which, after his manner of speaking, he com-

* See this letter in Hakluyt, l. c., p. 303, 305—the passage p. 303.

prises also the map, ("Provincæ Chorographiam," in England, from the widow of James Le Moynes, the painter, ("pictor,") who accompanied Laudonniere, made those drawings and wrote that report, which all in his lifetime he had also shown sometimes to De Bry, as he did show it before to Charles IX, King of France. If this King of France, as we should suppose, retained a manuscript copy of the map, and if such a copy could perhaps be found yet in France, I cannot tell.

At the end of his introduction to Le Moynes's report De Bry says again the same thing, a little more explicitly, under the title: "De occasione et auctore hujus historię," (on the occasion and on the author of this history.) He says there that he "*bought*" the manuscript-writings and pictures from the author's widow in the year 1587.

This is all that we can learn about the exterior history of the map. As for the interior history and criticism of the map, we cannot here, without giving to the reader a copy of the map itself, enter into a full analysis of it, and will only make on it the following general remarks: The map commences in the south with the Cape of Florida (Promontorium Floridæ") and a part of the Bahama Islands, and ends in the north with "Promontorium Terrefalq," (Cape Trafalgar.)

The southern extremity (Cape Florida) is very well situated. It has about the latitude of $25\frac{1}{2}^{\circ}$ north, which comes very near the truth. The northern extremity of Cape Trafalgar is laid down in $33\frac{1}{2}^{\circ}$ north latitude, and this supports the view of those who believe that the old Spanish "Cape Trafalgar" is our Cape Lookout or Cape Fear, whilst others have believed that it was Cape Hatteras, which is $1\frac{1}{2}$ degree further to the north.

The French actual surveys and observations did

not go beyond the River Jordan (Charlestown harbor) and beyond Cape St. Roman. Le Moyne took all the coast between River Jordan and Cape Trafalgar from Spanish maps, which is sufficiently indicated by the old Spanish names which he has all along this coast: *Flumen Siccum*, (Rio Seco,) *Portus Principis*, (Puerto del Principe,) &c. The same may be said of that piece of the map which lies to the south of Cape Cañaveral. The French navigators coasted here only along the shores, without making particular observations. Their explorations and landings commenced from a point a little south of St. Augustine harbor, and went not quite as far north as Rio Jordan.

Though De Bry, as I said, published this map in the year 1591, still it does not appear that the geographers and map-makers made at once an extensive use of it. It is true Hondius, L'Escarbot, Mercator, Laët, and other celebrated Dutch and French geographers and map-engravers of the fifty years subsequent to De Bry's publication copied the map in their great works. But we find in the same period many other great maps of America which do not show the slightest acquaintance with this map. The Spaniards especially ignored it completely, though they had scarcely any thing better to show, so far as they at least pleased to make the world acquainted with their productions.

Nay, more, those which copied the map of Le Moyne copied it, by the by, quite badly and disfigured it very much. This disfiguration and deterioration of the map seems to grow worse in the course of time—probably in the same proportion in which the valuable and expensive works of De Bry grew scarce. We have, for instance, a copy of the map of Hondius of the year 1607, which is tolerably good and accurate, whilst in the great atlas of Hondius

and Mercator (edition of 1633) a very false and wrong copy is given. Even that excellent geographer, Laët, gives in his much praised, and in many respects most estimable work, a picture of the French Florida and its rivers in which the principal features are totally misrepresented. So, for instance, he lays the whole scene of the French expedition to the north of St. Augustine and of Rio S. Mateo, and makes quite a different river of the Spanish Rio S. Mateo and the French May river, whilst they are essentially the same. Likewise he changes completely the course of the May river, (St. John's river or S. Mateo river,) which on the old map of Le Moyne is so well and truly represented. Consequently, also, Cape François and every other object of the coast is misplaced.

The first man who introduced this fault was, so far as I know, a Frenchman, and no less a person than the famous historian of New-France himself, L'Escarbot. He has in the edition of his work of the year 1618 a map to which he gives the title: "Figure et description de la terre, reconnue et habitée par les François à la Floride et au-deça, gisante par les 30, 31, et 32 degrés, de la main de Mr. Marc L'Escarbot." (Figure and description of the country reconnoitered and inhabited by the French in Florida and further on, lying under 30, 31, and 32 deg., by the hand of Mr. Marc L'Escarbot.) From whence he has taken this map he does not say, nor why he has introduced his incorrect and completely false changes. He makes the Riviere des Dauphins (Dauphin river, Augustine harbor) to be quite a large river, running from a great lake, whilst it was represented on Le Moyne's map only as an inlet in the coast, with a river running into it, in harmony with reality. He makes of Riviere de May (May river, St. John's or St. Mateo river) a river flowing di-

rectly from the northwest out of an immensely large lake, while it is represented on Le Moyne's map, in accordance with nature, as a crooked river, at first coming from the southwest and then abruptly turning to the southeast. Also, his representations of the other French Floridian rivers, and especially of Port Royal, are no improvements.

L'Escarbot's work, however, as something new, was probably at the time more read and in more hands than the already somewhat antiquated De Bry, and therefore also his map was more copied. Laët and others adopted L'Escarbot's corrupted copy of Le Moyne's excellent old map.

We say that the same has been done by all subsequent map makers throughout the whole course of the 17th century, until 1670, until the first English settlements in the colony of Carolina. We find still in the year 1682, on the map of Carolina, published by order of the proprietors, the southern part of that province drawn after the map of Le Moyne, or rather after the corrupted copy of this map by L'Escarbot.

Chart of California by Castillo, 1541.

Hakluyt takes no notice of the first expeditions to the Californian Gulf conducted by Hurtado de Mendoza, and by Hernando de Grijalva, and by Cortes himself. He gives us only the reports of the two principal early exploring expeditions of the gulf and peninsula of California under Francisco de Ulloa (1539) and Fernando Alarcon, (1540,) of which the first was sent out by Cortes and the second by the Viceroy of Mexico, Mendoza, Cortes's successor in command.

The most important of these two voyages was no doubt that of Ulloa. He sailed along the whole eastern as well as western shore of the gulf to its northern end, explored and named numerous har-

bors, river-mouths, and islands, believed to find the gulf in the north closed, sailed back along its western shore, ascertained that also there was no passage, no broken land and islands, but one continuous shore, turned round the Cape of Southern California, and sailed along its outer or oceanic coast to the northwest, as far as what he called the Cabo de Engaño, (Cape of Mistake,) which he puts in $30\frac{1}{2}^{\circ}$ north latitude.

The second voyage under Alarcon ranged like the first along the eastern and western shore of the inner gulf, but did nothing at all for the further discovery of the outer or oceanic coast. Instead of this Alarcon had the merit of ascertaining better than Ulloa the nature of the northern end of the gulf and of exploring the great river Colorado, which he asserts to have sailed up for eighty-five leagues.

Both Ulloa and Alarcon appear to have made a very good survey and research. Both were accompanied by good pilots—Ulloa by one Juan Castillo* and Francisco Preciado, who wrote the report on this voyage;† Alarcon by one Nicolas Zamorano, his Piloto Mayor and "*Dominico del Castillo*,"‡ which latter made the chart to that voyage, of which we will speak instantly. The reports on both voyages are so ably and clearly written as few journals of that time, especially that of the first or Ulloa's voyage, written by Francisco Preciado. The report on the second voyage is written by the Commander Alarcon himself. Both were printed for the first time in Ramusio, from which Hakluyt took them. They are unhappily both not complete. That of Alarcon has only a few words on the home-

* His "chief pilote," Hakluyt, l. c., p. 408.

† See this report in Hakluyt, p. 397, seq.

‡ See Hakluyt, l. c., p. 425.

voyage, and that of Preciado has only a short note on the discoveries of Ulloa beyond the island of Cedros, towards Cabo de Engaño, because Preciado was no eye-witness in this last part of Ulloa's explorations.

There can be no doubt that on both voyages charts were made.

The original charts of both voyages are, however lost to us. But the pilot of the second or Alarcon's expedition, Dominico del Castillo, as he is called in Hakluyt, or "Domingo del Castillo," as he calls himself, compiled after the second voyage, in the year 1541, in Mexico, a little chart of the visited coasts, for which he appears to have used the sketches and materials collected on both voyages.

This chart was preserved and hidden for a long time in the archives of the descendants of Cortes, until, after the middle of the eighteenth century, the Bishop Lorenzano found it there, copied it, and published an engraving of it in his well-known work on Mexico.

This chart is the oldest and most interesting cartographical document on California which we have.

It has the following inscription: "Domingo del Castillo, Piloto, me fecit en Mexico año del Nacimiento de N. S. Christo de MDXLI." (Domingo del Castillo, pilot, made me in Mexico in the year of the birth of our Saviour, 1541.)

This chart is particularly rich in names on the eastern shore of the Gulf of California, or on the coasts of Mexico, Cinaloa, and Sonora.

In the report of Alarcon we hear very little or nothing on the explorations made by him along this coast, though he boasts that he sailed so near the shore that he discovered there many other good

havens, which "the ships of the Marquesse del Valle," (Cortes,) that is to say, the expedition under Ulloa, neither saw nor found.* Some of the names marked on this coast on our chart are mentioned in the expedition of Ulloa; as, for instance, "the river of S. Pedro and Paulo," "Ancon de S. Andros." The rest is perfectly new, and neither contained in the journal of Ulloa nor in that of Alarcon. It is very common that the navigators mention in their journals not all the names given by them, and fill with them their charts. It is evident, therefore, that our chart can serve us, not only as an illustration, but also as an additional supplement to our reports.

The principal discovery of Alarcon was the exploration of the north end of the Gulf, and of the mouth, bar, delta, and lower course of the Rio Colorado, which Ulloa did not explore.

He sounded there, measured distances, and observed the geographical position, and probably made a large special map of it.

He requested there even an intelligent Indian, with whom he conversed, "*to set him downe in a charte as much as he knew concerning that river;*" "which this Indian did willingly."†

In our little general sketch these parts have been treated very generally. That, however, the charts of Arlacon were used is evident from the circumstance that two principal branches of the Rio Colorado have received the names "Rio de Buena Guia" and "Brazo de Miraflores," names which do not occur in Ulloa's reports, but only in that of Alarcon.

Castillo puts down upon his chart the northern end of the Gulf and the mouth of the Rio Colorado under about 34° N. L., in harmony with Alarcon's

* Hakluyt, l. c., p. 425.

† Hakluyt, l. c., p. 488.

observation, who says about this in his report the following :

"By the situation of the river, and by the height which I took, I finde that that which the masters and pilots of the Marquesse (Ulloa, Cortes's captain) took is false, and that they were deceived by two degrees, and I have sayled beyond them above four degrees."*

According to this, I said, Castillo puts down the northern end of the Gulf in 34° N. L. This is more than two degrees higher than the true latitude which we have on our present maps ; and if, as it appears from Alarcon's journal, Ulloa had *this* latitude, he must have been a much better observer, and we must regret it so much more that we do not possess at present his original charts.

It is to be observed that there is a spirit of boasting in the reports of Alarcon, and that there was a feeling of emulation and envy between him and his predecessor, Ulloa, naturally growing out of the circumstance, that they were sent upon the same errand—"to find out the secret of the Gulf." This invidious feeling was probably still enhanced by the other circumstance that Ulloa was commissioned by Cortes and Alarcon by Mendoza, the successor and, in a certain degree, opponent of Cortes. Alarcon wished to surpass Ulloa in every respect.

The coast of the peninsula of California towards the main ocean, which was not seen at all by Alarcon, is put down in Castillo's chart after the charts of Ulloa. We find here the names "Punta de la Trinidad," "Pto de Senabad," "the islands of St. Estevan," of which one was the Island of Ceders, (Isle de Cedros,) to which on our chart is written the name "Pto de reparo," (the harbor of careening or caulking,) because Ulloa repaired and caulked there one of his ships and the "Cabo del Engaño."

* In Hakluyt, l. c., p. 489.

The latitudes are in this part of the chart much too low. The St. Stephen's islands are put in the latitude of 26° whilst they stand in 27° ; and the Cabo del Engaño is put in 27° , whilst Ulloa appears to place* the cape which he called so in $30^{\circ} 31'$. The same invidious and boasting feeling which induced Alarcon and his pilot (Castillo) to extend the interior of the Gulf, which they considered to be their own discovery, two degrees further to the north, induced them probably also to bring the *ne plus ultra* of Ulloa further down to the south.

Chart of Francis Gualle—1584.

Francisco de Gualle† made in the years 1582-'84 a voyage from Acapulco to Manilla and China, and from there back again to Acapulco, which was in a certain degree a voyage of discovery, and is therefore often mentioned in the history of the Geography of the Pacific Ocean.

Hakluyt gives us Gualle's report after Linschoten, and from the concluding remarks appended to this report it appears that Gualle probably made a chart of his discoveries and route. The "Conclusion" says this:

"All this description and navigation have I myselfe (Gualle) seen, prooved, and well-noted in my voyage, . . . as I will more at large set down, with the longitudes and latitudes thereof, as God shall permit mee time and leysure."‡

It seems likely that Gualle promises here a map, and if we could find this map it would be one of the most interesting documents for the history of the American northwest coast.

* Hakluyt, l. c., p. 424. It is, however, somewhat doubtful if the concluding remark of Ulloa's report, which contains that observation, belongs to the original report itself or if it is an additional remark of Hakluyt.

† I write this name like Hakluyt.

‡ See Hakluyt, p. 447.

Maps of Guyana, by Sir Walter Raleigh—1595.

Sir Walter Raleigh,* when he had planned an expedition to Guyana, sent out in the year 1594 to that country Mr. Whiddon, one of his captains, "*to get what knowledge he could of Guyana.*"† We have in Hakluyt no particular report on the voyage of this Capt. Whiddon, and the chart which he brought home is not pointed out to us. That he constructed and brought one is very probable, because his voyage was a preliminary and reconnoitering expedition, and because it therefore seems *that the construction of a map ought to have been one of its principal objects.* Whiddon's reports and charts were probably delivered to Sir Walter Raleigh, who, however, does only once allude to them, and as it appears blames them as not very exact. He says, after having mentioned Whiddon's expedition, "*but my intelligence was far from truth,*"‡ meaning, evidently, the preliminary intelligence which he received from Mr. Whiddon, his reports, papers, (and maps?)

After Whiddon's return, Sir Walter Raleigh himself set out from England for Guyana on the 6th of February, 1595, and, after having explored the coasts and waters before the mouth of the Orinoco, the Gulf of Paria, the Island of Trinidad, different river-branches of the delta of the Orinoco, and this river itself as high up as the river "Caroli," (our Caroni,) he returned to England at the end of the same year 1595, and wrote a circumstantial report on his voyage, addressed to Lord Charles Howard and Sir Robert Cecyll.||

* I write this name with the spelling adopted by Hakluyt.

† Hakluyt, l. c., p. 633.

‡ Hakluyt, l. c., p. 633.

|| Hakluyt gives this report, l. c., p. 627, 662.

We learn, from different passages in his report, that he wrote it—probably at least the *greater part* of it—during the voyage itself. He may have corrected and mended it after his return; but the whole report must have been perfectly finished very soon after his return, probably in the year 1595. This is evident from the letter or “Advertisement to the Reader,” signed W. R., (Walter Raleigh,) and put by Hakluyt as an introduction to a certain collection of Spanish letters which were captured by Capt. Popham. In this advertisement Sir Walter Raleigh says that Capt. Popham returned to England “two moneths after him,” (consequently in the beginning of 1596,) “and also long after *the writing of the former discourse*,” alluding to his own circumstantial report.*

Sir Walter Raleigh appears to have made, or at least prepared himself during and after this voyage *different maps*. The two of which he speaks in explicit terms are the following :

1. *A special map of the Island of Trinidad.*—Raleigh, after having given a geographical description of this island, says : “Of other ports and rivers” (of the island of Trinidad) “I leave to speak here, and *meane* to describe them *as they are situate in the particular plot* and description of the yland. Three parts of it I coasted with my barge that I might the better describe it.”†

And still in another place, being on the coasts of Trinidad, Raleigh says : “I left the ships and kept by the shore, the better to come to speach with some of the inhabitants, and also to understand the rivers, watering places, and ports of the yland, which, *as it is rudely done*, my purpose is to send your lordship after a few days.”‡

* Hakluyt, l. c., p. 662, 663.

† See Hakluyt, p. 632.

‡ See Hakluyt, l. c. p. 681.

From this there is no doubt that Sir Walter R. made a particular survey of the island of Trinidad, and prepared a map or rude sketches of it. If he afterwards really *plotted out and compiled* these sketches and composed them to a nice picture, as he "*meant*" to do, we do not know, and if so we also do not know if this map does still exist somewhere.

2. *A large general map of Guyana, of the whole river Orinoco and bordering regions*: 1595.—Sir Walter Raleigh states himself, in explicit terms, that he made such a map. After having given a short report of the Spanish expedition along the Orinoco under the command of Antonio de Berreo he says:

"How all these rivers crosse and encounter, how the country lies and is bordered, the passage of Berreo, mine owne discovery, and the way that I entered, with all the rest of the nations and rivers, your lordships shall receive in a *large chart or map*, which I have not yet finished, and which I shall most humbly pray your lordships to secret, and not to suffer to passe your owne hands; for by a draught thereof all may be prevented by other nations."*

He again alludes to his map, when, after having enumerated different Indian tribes, he says: "*All which shall be described in my description as they are situate.*"†

And again after having named different branches of the Orinoco, and after having described their course, he says: "*But to speake of more of these rivers without the description were but tedious, and therefore I will leave the rest to the description.*"‡ The word "*description*" was in former times often used for "*map*." I could produce many old maps

* Hakluyt, l. c. p. 637.

† Hakluyt, l. c. p. 638.

‡ Hakluyt, l. c. p. 653.

which are called on the title-page "descriptions." That Sir Walter Raleigh takes it in this sense is evident from the manner he uses that word.

And again on his return journey through the Delta of the Orinoco, after coming to the sea-shore, he says: "To speake of what passed homeward were tedious either to describe or name any of the rivers, islands, or villages of the Tiuitiuas which dwell on trees. We will leave all those to the *general mappe*."*

From these quotations it is evident that Sir Walter Raleigh was occupied on his travels in making a large map. He had *prepared* it and *commenced its execution*, though not quite "*finished*" it, at least not when he wrote the letter to Lord Howard and Sir R. Cecyll. *He, however, finished it afterwards, and the British Museum contains the very document in question.* Because I believe that the discovery of this document is something new, and because it is a production of such a man like Sir Walter Raleigh, and as the best illustration to Sir Walter Raleigh's travels in Guyana of some value. I may be allowed to be on this point as explicit and complete as possible.

At first I will give a description of the exterior of this interesting paper, and then I will enter into the detail of its contents, compare it with the reports of Sir Walter Raleigh, and *put it quite without doubt* that we have in it nothing else but that very map which Sir Walter Raleigh promised to his friends and lords.

The map in question is contained amongst the rolls of the manuscript department of the British Museum.† It is drawn on thick parchment, which

* See Hakluyt, l. c. p. 658.

† To my great regret I have lost my note about the catalogue number of the map, and cannot in this distant country replace it.

is rather somewhat darkened by age, and more or less roughly treated, and not without wrinkles. This parchment, or rather the drawing *on* the parchment, is about two English feet long and about one and a half feet broad.

All that is represented on the map—coast and river lines, mountains, names—is drawn with a pen and with somewhat faded ink, not very marked, and without any coloring at all. The surface of the sea is covered with short horizontal lines or dots, a kind of shading, which was, about 1600, very usual for marking the surface of the sea. The broad rivers are also shaded with short stripes; the mountains are shaded on the western side; the names of places, rivers, nations, &c. are pretty distinctly written, some with larger, some with smaller letters, none with *very* large ones. The Indian villages and “nations” have a sign which seems to imitate a group of tents or huts. What is intended to be a Spanish settlement or city is indicated either with three joined little roofed houses with chimneys, or with a group of different buildings, with churches, cupolas, and towers. If the names are written in the handwriting of Sir Walter Raleigh I was unable to decide. If this were the case, then this map in the British Museum could be proved to be the very map which he made *with his hands on his voyage*. That the contents of the map and the whole composition itself *originated* in him, and that our parchment contains at least an *exact copy or tracing from his map*, I will prove.

I must still observe that the map has also, like the original maps of Frobisher and other old navigators, no indication of latitude and longitude. Probably Sir Walter Raleigh, who, as we have seen, was very anxious that his map should not fall into other hands, was afraid of putting his astronomical

observations down on the map, from fear that his secrets might be divulged. Also, in his long report he mentions only once or twice a latitude, and never a longitude.

About the history of the parchment I learned nothing more than that it was bought for the British Museum of T. W. Turner in the year 1849, which I think was written on the map itself or noted in the catalogue.

I will now compare the contents and names on the map with those given in Raleigh's report, and show how perfectly both map and report agree. They agree at first in respect to the regions which they comprise.

The report gives descriptions principally of the Orinoco and Guiana, but notices also the countries to the south, west, and north. Raleigh names different towns, Spanish cities, and Indian nations in New Granada and the present Venezuela, and enters sometimes into specialities. He also mentions Quito, and has some, but very vague, remarks on the Amazon river.

The map has, in the same manner, the whole Orinoco in the centre of the picture. In New Granada and Venezuela all the cities mentioned by Raleigh, and even many more are put down. Quito appears on the western margin, and in the south the Amazonas is drawn in a very rough and vague manner.

Entering into the details, I may begin with the *Island of Trinidad*. Raleigh says, as I remarked above, that he himself surveyed this island particularly, and that he made a special chart of it. Our map bears proofs of this special survey. The island has its true situation and configuration, and is better laid down than any other part of the country.

Raleigh often mentions on this island the "Puer-

to de los Españoles," (the port of the Spaniards,) which, as he says, the Indians call "Conquerabia." On the map we find "Cumquerabia."

Something similar may be said of the Gulf of Paria, which is very well represented on our map, which Raleigh crossed so often, and in which (Bay of Guanipa) his vessels were anchoring whilst he was in the interior. The great delta of the Orinoco is in the report depicted thus:

"The great river Orenoque hath nine branches, which fall out on the north side of his owne *maine mouth*. On the south side it hath seven other fallings into the sea. So it disembogueth by sixteen arms in all, between islands and broken ground. But the islands are very great, many as bigge as the Isle of Wight, and bigger, and many lesse. * And all those that inhabit in the mouth of this river upon the severall north-branches are the Tiuitiuas. †

And again, in describing the labyrinth of rivers in the Delta, Raleigh says:

"I know all the earth doeth not yeelde the like confluence of streams and branches, the one crossing the other so many times, and all so fair and large, and so like to another, as no man can tell which to take." ‡

The map *corresponds with this description perfectly*. It represents one "maine river," and then to the north exactly nine branches emptying into the sea, and in the interior of the delta a large net work of river-branches, alike fair, alike broad, one crossing the other. The seven branches on the south side are not all given. The Indian nation Tiuitiuas are named in the delta with great letters. We find on it also the names of some of the principal branches, the "Amana," the "Tapuri," etc., often mentioned in the report.

* Hakluyt, l. c., p. 644.

† Hakluyt, l. c., p. 644.

‡ Hakluyt, l. c., p. 643.

About the general direction of the course of the Orinoco Raleigh says: "The river lieth for the 'most part east and west, even from the sea unto 'Quito and Peru.'" *So he has it also on his map*, upon which the winding river follows the indicated direction. The city of Quito lies at its sources, which all is not so very wrong, if we take the Guaviare as the upper Orinoco.

Raleigh went himself up the Orinoco as high as the Caroni, which is called by him "Caroli," and which is indicated on his map, though without the name. Beyond this river, he says, follow the Arui," "the Caora." We find them in this situation on his map, on which also the country "Aromaia," "the great Valley Amario-tapana," the province "Emeria," "the mountains of Wakarima," and different other places are put down to the south of the Orinoco in *that position which is ascribed to them in the report.*

All these parts of the map from the Island of Trinidad through the Delta as high up as the Caroni may be considered as laid down by Sir Walter Raleigh from actual survey. All the more western parts of the river-system he knew and drew only from the report of the Spaniards and Indians.

Sir Walter Raleigh was a very active, curious, and inquisitive traveller, most desirous of information.

"Much knowledge," he says, "I got from conference. Of some one I learned one, of others the rest. Having with me an Indian that speake many languages, I sought out all the aged men, and such as were greatest travellers, and by the one and the other I came to understand the situations, the rivers, the kingdoms, from the East-sea to the borders of Peru and from Orenoque southward as farre as Amazonas."*

His principal authority, however, was Antonio

* Hakluyt, l. c., p. 639.

de Berreo,* the Spanish governor of the Orinoco provinces, (Nueva Andalusia,) whom he made a prisoner in the Island of Trinidad, and whom he carried for awhile with him "to gather from him as much of Guiana as he knew."†

This Berreo could know much of the country, for he had travelled through the whole Orinoco basin from west to east. He had been commissioned by the Spanish Government with the conquest of the country, and with its protection against the English expeditions and Sir Walter Raleigh's plans, of which the Spaniards probably had received some information. With 700 horses and 1,000 head of cattle he had set out from Sta Fe de Bogota and the Mountains of New Granada, along the river "Cassamar," "which falleth into a great river called Pato. Pato falleth into Meta and Meta into Baraguan, which is also called Orenoque." In this manner Berreo arrived at the shores of the sea in the east.

Berreo was, as Sir Walter Raleigh says, a gentleman "well descended," "very valiant and liberall and of great assuredness and heart."‡ But in the same time he was very "unlearned, not knowing the east from the west," neither was he very curious in things relating to the geographical knowledge of the country.|| Nevertheless he was for many things the only authority which Sir Walter Raleigh had, and what he learned from him he laid that down in his report *and on his map*.

On this latter we see the river system of the Meta pretty well indicated, with its heads or sources in the vicinity of Sta Fe de Bogota and Tunia. As its principal branches are given the "River Pato"

* By the Spanish authors called Berrio.

† Hakluyt, l. c., p. 633.

‡ Ib. l. c., p. 633.

|| See Hakluyt, l. c., p. 629.

(our present Pauto) and the "Cassamar," (in the report Cassamar, our present Casanare.) At the junction of the Meta with the Orinoco this latter bears also the name "Baraguan," mentioned in the report.

Still further up the Orinoco we find on the map as the most western branches the "Guiare," (our present Guaviare,) and another branch, the "Manta." They are likewise mentioned in Raleigh's report.

Like the different river-branches so we find also all the names of the different Indian nations, which are mentioned in the report, laid down on the map, with the same orthography and in the same situation given to them in the report.

At last also to his fatulcus lake and city of Manoa that place is assigned on the map which Raleigh gives to them in his report, between the Orinoco and Amazon. "The lake," he says, "is about two hundred leagues long,"* and this length it appears to have on the map. The "imperial city" he describes as exceeding in bigness every city in the world, and on the map the city appears with numerous towers and cupolas.

I could still enter more deeply into the detail of the congruity between the report and map, if I did not believe I had done enough to prove what I wished to prove.

I thought for some time that Sir Walter Raleigh might have found in the possession of Berreo or some other Spaniard a Spanish draught of the Orinoco and vicinity, and that he might have used this for the composition of his own map. But for this I find not the slightest proof or indication in his report. If Raleigh could have got hold of such a map he would no doubt have mentioned it, because, after his manner, he would have considered

* Hakluyt, l. c. p. 634.

it as something very precious and valuable, and because he mentions in all other instances his authorities and informants.

That he could have used for his compilation afterwards a map of the Orinoco in Europe appears also not likely to me, because it does not appear that the first Spanish conquerors and discoverers of the Orinoco, of the early part of the sixteenth century, were very anxious to make such maps. There *may* have been such maps hidden in the Spanish archives. But it is a very remarkable circumstance that not on a single one of all the numerous Spanish, French, or Italian maps, (manuscript or printed,) of the time before Raleigh,* the Orinoco is laid down as a great river. It is on all of them only indicated at its mouth with the name "Rio Dulca," or "Rio del Drago," or "Rio Uriapari." Its body and course are perfectly left out, whilst on the same maps the Amazon, the Rio Plata, and Magdalena make already a great figure. I cannot quite account for this circumstance, but it is a fact. And Sir Walter Raleigh has decidedly *the merit to have for the first time tried to lay down the course and system of that river on a map*, entirely after his own observations, after his travelling notes, and after the reports and information collected by his industry. He introduced for saying so this river into geography, and soon after his time we find it on *all* the maps.

For that part of his map, however, which represents the northern coast of South America, Raleigh no doubt copied another map of his time, perhaps a Spanish one. He has given there the names and positions of about fifty Spanish towns and cities, the river Atrato, the river Magdalena, the gulf of Venezuela, the island of Margarita, etc. He could

* At least on none of all those which I have seen.

not draw this all after Berreo's report. He does not, however, tell us which map he consulted for these parts.

From all that I have said it results, as something quite certain—

1. That Sir Walter Raleigh was sufficiently informed about his country and river to draw a map.

2. That he really drew one.

3. That the document, in the British Museum to which I alluded is in general correspondence with his report.

4. That the document has, as well in respect to its materials as also in respect to the manner of drawing, handwriting, and orthography, the look of a very old document, of about the time of 1600.

I admit that, with these results alone, we are still far from the certainty that the document in question was made by the hand of Sir Walter Raleigh himself, or even that it was an exact copy of his own map, made by a contemporary. But I believe I am still able to prove that the document in question was, if not drawn by Raleigh's own hand, at least a copy or tracing from his own chart. One may feel inclined at first sight to ask if somebody could not have composed this map after Raleigh's report, and if the congruity could not be explained in this manner? A close inspection of the document, however, I believe excludes this supposition. In this respect I ask the attention of the reader to the following circumstances :

1. Raleigh says, as I have stated above, that he has made a "*large*" map of the Orinoco and Guyana. Our document, as I showed, is *pretty large*, (2 feet by 1½.) A compiler or imitator after Raleigh's reports might have overlooked this, and could also have made a small chart.

2. Raleigh had made, as I said, a *particular*

survey of the Island of Trinidad, and this island is on our map the best and most correct part of it. I believe it perfectly impossible that a compiler or imitator could have given to this island that good and true configuration only after Raleigh's verbal description and without having his maps before his eyes.

3. In the same manner I believe it not possible that a contemporary student could have drawn the "main mouth" of the river and its delta so well as it is represented on our map without the use of Raleigh's charts.

4. Furthermore, I may state that, notwithstanding the general accordance of map and report, still there are some slight differences. Some names are mentioned in the report which are not given in the map, and, vice versa, *there are some Indian names on the map which do not occur in the report*. A few names are also written otherwise in the map than in the report. It is very probable that an industrious, accurate, and pains-taking compiler would have put down the names, and *all* the names, on the map in the same manner in which he found them in the report. And certainly he could not have added to the map new names which he did not find in the report. On the contrary, it is very natural that Raleigh himself should put down the "hard" Indian names, about the orthography of which he was not at all sure sometimes differently. And he only, and nobody else, could also add some names to the map which he had omitted in the report.

5. A compiler from the report would probably also have taken the trouble of adding the latitudes, whilst Raleigh, as I said, had his reasons for leaving them out. And they are left out in our document.

All this, I believe, puts it quite out of doubt that we have in our map, if not Raleigh's actual map itself, *at least* a true copy of it, *made by one of his contemporaries, and consequently a very interesting document.*

The question if the British Museum possesses the map drawn by Raleigh's own hand and pen could be quite satisfactorily settled only by an able diplomatist and by a close comparison of the handwriting of the document with Sir Walter R.'s usual handwriting. I am not able to attempt this at present.

Very soon after Raleigh's return copies of his report, or at least of some contents of it, and also perhaps of his map, became known in Europe. And the geographers set themselves at once to work to make maps of the Orinoco.

The oldest and most interesting are those published by Hulsius, Hondius, and in De Bry. Also, the history of these second-hand copies and compilations after Raleigh is very interesting. But we will not enter into a further criticism of them, because our Hakluyt, who does not mention them, affords us no occasion for it.*

Charts of Captains L. Keymis and T. Masham.
1596-'97.

Sir Walter Raleigh, full of the most extravagant hopes for his enterprise to Guyana, sent out at once, in the following year, to the regions visited by him two other expeditions, one under the command of Capt. Lawrence Keymis, which sailed on the 26th of January, 1596, and another under the command of Capt. Thomas Masham, which sailed on the 14th of October, 1596. Both these captains surveyed

* I have tried to give the history of these maps more at large in my general catalogue of American maps.

of reconnoitered the coast of Guyana, between the mouth of the Amazon and the Orinoco, a part of South America which Raleigh had not seen at all. Both brought home reports of their voyages, and *probably also charts*. Neither of them, however, did add much to the knowledge of the Orinoco, which they did not explore farther and better than Raleigh had done it. The more important of both voyages and reports are those of Keymis.*

No charts are explicitly mentioned neither in the report of Keymis nor in that of Masham. But in that of Keymis we find different passages, which show us that he inspected *very closely* different parts of the coast seen by him. "As we passed," he says, "we always kept the shore within view and stopped the floods, still anchoring at night in three or four fathomes."† He speaks also repeatedly of the "pilots" which he took in at the coasts to show him the way.‡

He spent in this way "23 days in discovery upon this coast"|| (of Guyana, between the Amazon and Orinoco.) He also gives a long table of names of the rivers, nations, and towns which he discovered on the coast. Among them are different river-names, which are still to-day in use, and which by Keymis were for the first time pronounced and introduced into geography; for instance, the Wiapoes, the Capurwacka, Caiane, (Cayenne,) Marawini, Shurinama, (Surinam,) Cusawini, Berbice, Dessekebe, (Essequibo.)

From all these *signs of an industrious research* it is very probable that Keymis laid this all down on a map, which he probably presented to Sir

* See these reports in Hakluyt, l. c., p. 672, 697.

† See Hakluyt, l. c., page 673.

‡ For instance, page 674.

§ See Hakluyt, l. c. p. 676.

Walter Raleigh. It is true he nowhere gives the longitudes and latitudes of the places in his report. But this is no proof that he did not make observations on the geographical position. He left them perhaps out *purposely*. They and perhaps all his charts may have been amongst "the *particular* relation of some *certain* things, which he had reserved, as properly belonging to his chief, Sir Walter Raleigh."*

Of Masham's expedition, which was very quick and of which the report is very short, we cannot say much. Neither charts nor surveying operations are mentioned, though he makes sometimes a geographical remark, which afterwards was inserted by geographers into their maps. For instance, a remark on the river Dessekebe, his seize, and his running up into the country "within a day's journey of the golden lake of Parima." We find on many subsequent maps the river Essekebo, drawn in accordance with this remark, and Masham's *note itself written to it*.†

It is very probable that charts of Captains Keymis and Masham or copies of them served Hondius, Hulsius, and De Bry in the construction of their maps of Guiana, for which they took the Orinoco from Raleigh's charts and the Southern seacoast from the charts of the named Captains.

We find upon them many names mentioned in Keymis's "table."

*An English Survey of La Plata river—1527,
1530.*

Hakluyt speaks of the voyage of Sebastian Cabot to the river La Plata only very shortly, because it was a voyage undertaken at the commencement and

* See Hakluyt, l. c. p. 683.

† For instance, on the map of Guyana, in De Bry.

for the benefit of the Court of Spain, and because it, therefore, was no object for *his* work on the Voyages of the *English* nation. *Partly*, however, also this voyage belonged to England, because a few Englishmen accompanied Cabot. On these only Cabot gives us a most interesting note.*

From this note it appears that the well-known† Englishman, M. Robert Thorne, settled as a merchant in Seville, "employed in the fleet," which was sent out in 1527, under the command of Sebastian Cabot, from Spain, to Magellan's Strait, 1,400 ducats. He "and his partner" gave this sum, principally for the purpose "that two Englishmen, friends of his, which were somewhat learned in cosmography, should go in the same ships, to bring him certaine relation of the situation of the country, and to be expert in the navigation of those seas, and there to have information of many other things, and advise that he desired to know especially." "If they should see," so the note goes on, "that in those quarters are ships and mariners of that country, and cards, by which they sail, which might be unlike the charts of the European nations, they should procure to have the said cards."

It is well known that Cabot's expedition of 1527 was intended for the South Sea and the Spice islands, but that he did not come so far; that he was stopped at the river Plata, and remained in the Plata country several years. Perhaps those two English "cosmographers" who were sent out by the wealthy merchant Thorne, with so special in-

* See Hakluyt, l. c., p. 726.

† He is well known from Hakluyt's "Divers Voyages," where Hakluyt speaks more of him, and communicates also a map of the World, sent out to England by this merchant.

structions for collecting and making charts, stayed there with Cabot, and employed their time *by making at least a chart of the La Plata*. I say "*perhaps*," for we do not learn any thing more of the fate of those Englishmen and their chart-making operations. The "*Rutier and particular description of the river Plata*," which Hakluyt mentions in his title of the said short "report of the two Englishmen," page 726, and which he gives on page 728 sq., was evidently not made by these two Englishmen in the year 1527, because it contains allusions to much later events; for instance, to the first planting of Buenos Ayres by Don Pedro de Mendoza.*

The history of Cabot's own surveys in the La Plata country, and their influence upon geography and map-making, can make no part of our research; because Hakluyt omits from the stated reasons the further circumstantial reports on this expedition.†

Sir Francis Drake—1577, 1580.

Hakluyt has not preserved us a copy of the instructions given to Sir Francis Drake on his remarkable circumnavigation of the globe. But we can guess what they *may* have been from the instructions given to a contemporary of his, to Master Fenton, who sailed only two years after Drake's return, in the year 1582. Hakluyt gives *in extenso* these "instructions given by the right honorable the Lords of the Council to M. Fenton, Esq., for the order to be observed in the voyage recommended to him for the East Indies and Cathay." Amongst these instructions occurs the following remarkable passage *relating to chart-making*:

"18. Item: you shall give straight order to restraints, that none shall make any charts or descriptions of the

* See Hakluyt, l. c., p. 729.

† I speak about it in my General Catalogue.

said voyage but such as shall be deputed by you the Generall; which said charts and descriptions we think meete that you, the Generall, shall take into your hands at your return to this our coast of England, leaving with them no copie, and to present them unto us at your returne; the like to be done, if they find any charts or maps in those countries."*

This, I believe, is the first and oldest instance of an official (English) disposition or nautical legislation about the making and preserving of charts which Hakluyt gives us. But it is from different evident reasons very probable that similar arrangements and instructions were already given before in many other instances.

We may derive from the quoted article the following conclusions:

1. That the English navigators of the 16th century were *in the habit of making sea-charts* on their expeditions.

2. That not only the navigators and commanders themselves made such charts, but that there were often also other persons on board of their vessels who were so curious and desirous of geographical instruction that they also tried to make charts.

3. That this, however, was by law prohibited, and as much as possible restrained.

4. That they also then already, as we find it in later times often mentioned, looked diligently after charts amongst other nations, and tried to *capture charts* and make use of them.

5. That all the *charts* made on board the official expeditions or captured on board of foreign vessels were *taken care of by the commander*, after the return delivered to the Lords of the Council, and probably preserved by this office.

Sir Francis Drake's great expedition round the

* See Hakluyt, l. c., p. 756.

globe was for saying so of a mixed nature. He equipped it partly on his own account, partly by the help of private adventurers. But, notwithstanding this, he had a commission of the Queen. We may, therefore, doubt that such strict and detailed instructions were given to him by the "Lords of the Council" as to Fenton. But it is to be supposed that his private adventurers or he himself *followed similar rules with respect to charts as those which were put down in the instructions of Fenton*. And though in the reports on his voyage no charts of his are given, and not even mentioned, still we may be convinced that he made, or ordered to be made, charts; that he took care of these charts, and afterwards presented them either to the Queen, or to the Council, or to the board of his private adventurers.

In Hakluyt's report on Drake's voyage we find only a very few scanty allusions to charts which Drake took on board when he sailed, or which he ordered to be made during the voyage, or which he captured from foreigners.

It is possible that Drake captured a chart already in the first ship, which he took near the island of St. Jago, on the coast of Africa, soon after his departure. We know for certain that he took in it a Portuguese pilot, Nuño da Silva.* He was the only prisoner whom Drake "retained," and who was forced to accompany him on his voyage through Magellan's Strait as far as Mexico! This Nuño da Silva appears to have been an able pilot, and to have assisted Drake in his navigation with his experience and advice, and helped him perhaps also in the construction of the charts. He wrote afterwards a report of Drake's voyage "for the Viceroy of New Spain."†

* Hakluyt, l. c. p. 732.

† See this report. Hakluyt, l. c. p. 742, sq.

When Drake had passed Magellan's Strait and sailed northward along the coasts of South America, we find in our report the following remarks :

" We supposed the coast of Chile, as the generall maps have described it, namely, northwest ; which we found to lie and trend to the northeast and eastwards, whereby it appears that this part of Chile hath not bene truely hitherto discovered, or at the least not truely reported for the space of twelve degrees at the least, being set down either of purpose to deceive or of ignorant conjecture."*

From this passage we may conclude that Drake had maps on board, which he compared with what he had before his eyes. It were probably maps of Mercator or of Ortelius, which have, like all the others of the time, the coast of Patagonia and Chili running in the indicated erroneous manner. We may also conclude, from the said passage, that Drake made a better and more correct sketch of that part of the coast. The good maps, which were soon made after his return, have the coast laid down so, as he describes it.

In the South Sea itself Drake took different Spanish vessels with rich cargoes, and very probably also with Spanish maps and sea-charts. In *one instance these sea-charts are explicitly mentioned*. The pilot Nuño da Silva relates it in his report. Drake took, Silva says, on the 13th of March, on the coast of Central America, before he put in into the harbor of Guatulco, a Spanish frigate, which was laden with sarsaparilla, pots with butter and honey, and other victuals. On board of this frigate was found a *Spanish sailor*, who meant to go to Panama and from there to China ; and who " had about him letters and patents, among the which were the letters of the King of Spaine, sent to the

* Hakluyt, l. c. p. 734.

Government of the Philippinas; *as also the sea cards*, wherewith they should make their voyage and direct themselves in their course.*

These Spanish sea charts may have been very valuable to Drake. They may have comprised the whole South Sea and its shores, so far as known to the Spaniards in Mexico and Peru. The circumstance seemed also remarkable to Hakluyt, and he makes on the margin of his work the annotation, "*Sea charts of the South Sea taken.*"

After leaving the harbor of Guatulco, Drake and his men "espied a shippe and tooke her and found in her *two pilots* and a *Spanish Governour* going for the islands of the Philippinas."† It is more than probable that this Spanish Governor had also maps and charts with him and that Drake took them.

When Drake and his men arrived on the coast of "Nova Albion" (Northern California) we find the following remark: "It seemeth that the Spaniards had never bene in this part of the country, neither did ever discover the land by many degrees to the southward of this place." Drake and his men came to this conclusion probably by looking at their Spanish charts. Is it likely that they, being aware or believing that they had discovered a perfectly new and until then unknown coast, should not try to lay it down on a chart?

From all this we may with some certainty conclude that *Drake brought home a rich harvest of charts, Spanish as well as of his own make*. Though it seems that all these charts and maps of Drake have disappeared for us, still it is very probable that some of the contemporary geographers saw and used them for improving their own charto-

* Hakluyt, l. c. p. 747.

† Hakluyt, l. c. p. 786.

graphical compositions. Soon after Drake's return, and evidently with the help of Drake's reports, (and charts?) Hondius made (1589) a map of the world, on which he laid down Drake's track. We see on it also added a little plan of "Drake's Harbour," (near San Francisco.) Perhaps this plan of Hondius was after an original survey of Drake himself.

A few years later (1592) the celebrated geographer, Molineux, composed his still much more valuable maps: 1st, that often by us quoted globe in the Middle Temple, in London; and, 2d, that plain map of the world, after Mercator's projection, of which Hakluyt speaks in the preface of his first volume. On both these works Molineux evidently made use of Drake's discoveries, reports, (and maps?) He puts down on them the southern end of America, (Cape Horn,) and the group of islands and the open water to the south, which Drake discovered there, when he was coming out from Magellan's Strait, driven back by a storm, to 57° S. L., and much to the east.* Molineux has also introduced in his maps the better indication of the trending of the coast of Chile as given by Drake. He gives on his globe the track of Drake, and, further, the coasts of New Albion, (or Northern California,) discovered by him *with certainty* as high as 48° N. L., and *after his conjecture* with dotted lines as high as about 55° N. L.

I mention all this, however, only briefly, and cannot enter here more deeply into the criticism of these maps *after* Drake, because they belong only in a certain degree to our subject.† I add only still the remark that the map which accompanies

* Also, Hondius has these things already on his map.

† I do this in my general catalogue of American maps and charts.

the well-known work, "The World Encompassed; by Sir Fr. Drake. London: 1628," has evidently little to do with Drake's own original charts.

Charts of M. Thomas Candish.—1586-'88.

Thomas Candish, in his celebrated circumnavigation of the globe, followed the footsteps of Drake. His voyage is nearly in every respect similar to that of Drake with respect to the general plan and intention of it, as also with respect to the route followed, and even with respect to the events on the voyage. Candish sailed, like Drake, through Magellan's Strait; from there along the coasts of South and Central America to California, where he, however, did not go up north as far as Drake, and from there to the Philippines and the coast of China, and home to England round the Cape of Good Hope. During his voyage he captured different prizes, and amongst them the great Spanish royal vessel, the *S. Anna*, laden with the treasures of the East, and *affording to him probably, also, Spanish maps of the South Sea.*

We may, therefore, apply the same remarks which we made on Drake's expedition also to that of Candish. It is probable that he made himself new charts, and also that he brought home Spanish charts.

Candish, after his return, reported about his voyage to Lord Hunsdon, "one of her Majestie's most honourable Privy Councill,"* and we may conclude from this that he had also instructions from this Privy Council; and among them such an article about chart-making and chart-preserving as the Lords of the Privy Council gave in the year 1582 to Fenton.†

* See Hakluyt, l. c., p. 837.

† See above, in our notes on Drake's charts.

Candish had also with him a very able pilot, "M. Thomas Fuller, who was master in the *Desire*," one of Candish's ships. Of this Fuller we have in Hakluyt a long series of "certaine rare and special notes" on "the heights of certain places" on the coasts of Brazil, Chile, Peru, &c.; on the "soundings" on these coasts, the trending of the shores, and other nautical objects.* Fuller's notes contain a series of the most complete sailing directions, given in Hakluyt. He must have been a very good astronomical observer and an industrious man. *Perhaps he was also the principal chart-maker of the expedition.*

We are further informed by Hakluyt that Candish "*brought home a large map of China.*" Hakluyt communicated to us certain notes, taken out of this map.† If Candish took a special care of this Chinese map, which is mentioned, it is very probable that he took also care of the other Spanish charts, which he probably captured, *though* they are not mentioned.

We can, however, say nothing more about the fate and further history of Candish's maps. Upon the whole his discoveries were not so novel, and did not extend so far north and south as those of Drake. Hondius and Molineux may, however, have used them also in the construction of their maps of America and of the world, to which I alluded above.

* See Hakluyt, l. c., p. 825, sq.

† See Hakluyt, l. c., p. 837.



